

hi-fi news & record review

JUNE
1978 45p

**An electronic
common-bass speaker
Adrian Boult interviewed**

**Top quality reel-to-reel
recorders reviewed**

Revox B77 (IEC High Speed)

Sony TC766

Pioneer RTU11/TAU11

Technics 1500

Music & Records
Discovering Organ Music
Hummel on Record
Classical, Rock, Folk, Jazz & Light Reviews



9 out of 10 people who read this ad shouldn't buy this speaker

If you own a receiver or amplifier of less than 40 watts per channel the Gale 401 loudspeaker is not for you!

If your system is just for background music to create a pleasant atmosphere, not for serious listening, the Gale 401 loudspeaker is not for you!

However, if you demand the best from your audio equipment

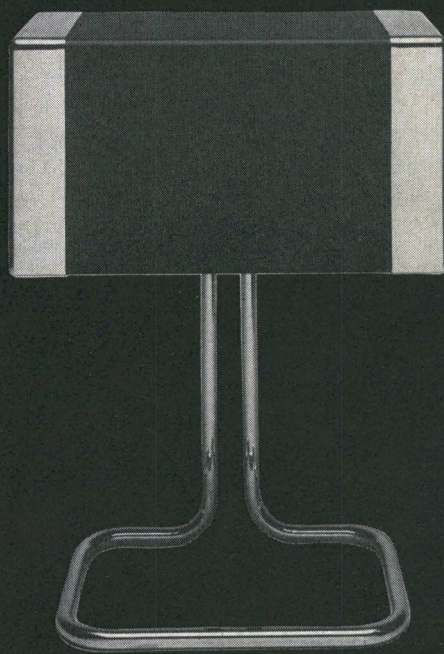
... insist on hearing everything that's on the record or tape you're playing

... insist on having your sound without

distortion when it's very loud or very soft

... insist on a speaker system capable of safely handling 200 watts ...

Then consider the Gale 401 loudspeaker.



Gale

Gale Electronics 23 Bruton Place London W1X 7AB

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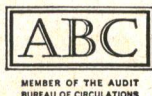
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Britain's largest circulation journal devoted equally to records and hi-fi, with an audited average net sale of 49,485 copies per issue at the last count (January–December 1977).

Technical articles of full page length or over appearing in *Hi-Fi News & Record Review* are detailed in the British Technology Index.



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COVER PICTURE

An imaginary tape recorder sets the scene for Martin Colloms' review of four open-spool models in this issue; Sir Adrian Boult, now getting on for ninety, looks as alert as he was during our recent interview with him (p. 107); and over on the left Trevor Attewell's modified common-bass Basset (p. 91) provides a firm foundation in both the musical and furnishing senses.

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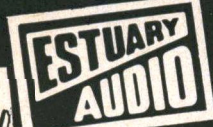
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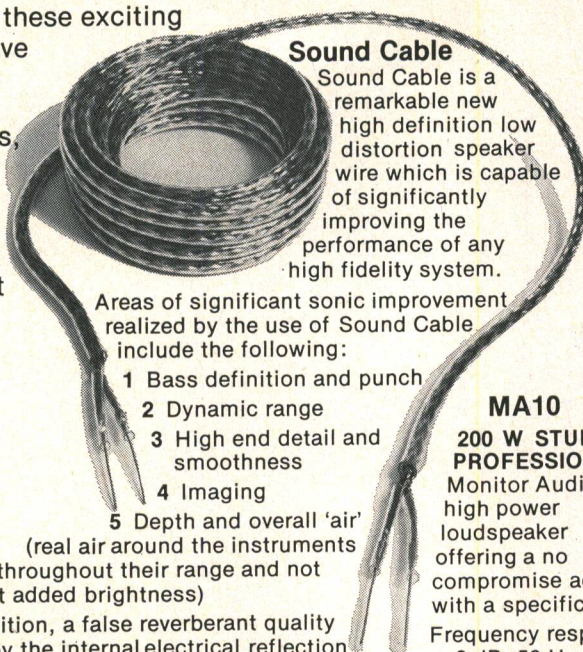
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BIG News for 78 from Monitor Audio

After many hours of painstaking research and development, Monitor Audio announce the big news of 78, three brand new hi-fi products.

To give you the best, these exciting new hi-fi products have been engineered with perfection in mind. During extensive tests, all surpassed even Monitor Audio's already high standards of quality.

We are confident that this announcement will be the biggest news to hit the hi-fi world in 78.



Sound Cable

Sound Cable is a remarkable new high definition low distortion speaker wire which is capable of significantly improving the performance of any high fidelity system.

Areas of significant sonic improvement realized by the use of Sound Cable include the following:

- 1 Bass definition and punch
- 2 Dynamic range
- 3 High end detail and smoothness
- 4 Imaging

5 Depth and overall 'air' (real air around the instruments throughout their range and not just added brightness)

In addition, a false reverberant quality caused by the internal electrical reflection in regular speaker wire is eliminated.

Typical characteristics

DC resistance: 12 ohms/metre

Inductance: 0.155 micro henry/metre

Impedance: 8.4 ohms

MA10

200 W STUDIO PROFESSIONAL

Monitor Audio's new high power loudspeaker offering a no compromise acoustic performance with a specification to match.

Frequency response: ± 2 dB, 50 Hz 20 kHz on axis

Voltage sensitivity: 2.83 volts will produce 87 dB

Distortion: Less than 1% even at high pressure levels 96 dB, 1 metre

Impedance: Nominally 8 ohms Dimensions: 80 cm high x 38 cm wide x 38 cm deep



ET500

The direct drive turntable with no compromise design features.

This product is the result of two years' research and has three very special features: **Lead laminate plinth**, **Separate power supply** and an **Interchangeable arm facility**.

Give the ET500 a hearing!



Interchangeable arm mount

Separate power unit

Anti-vibration plinth

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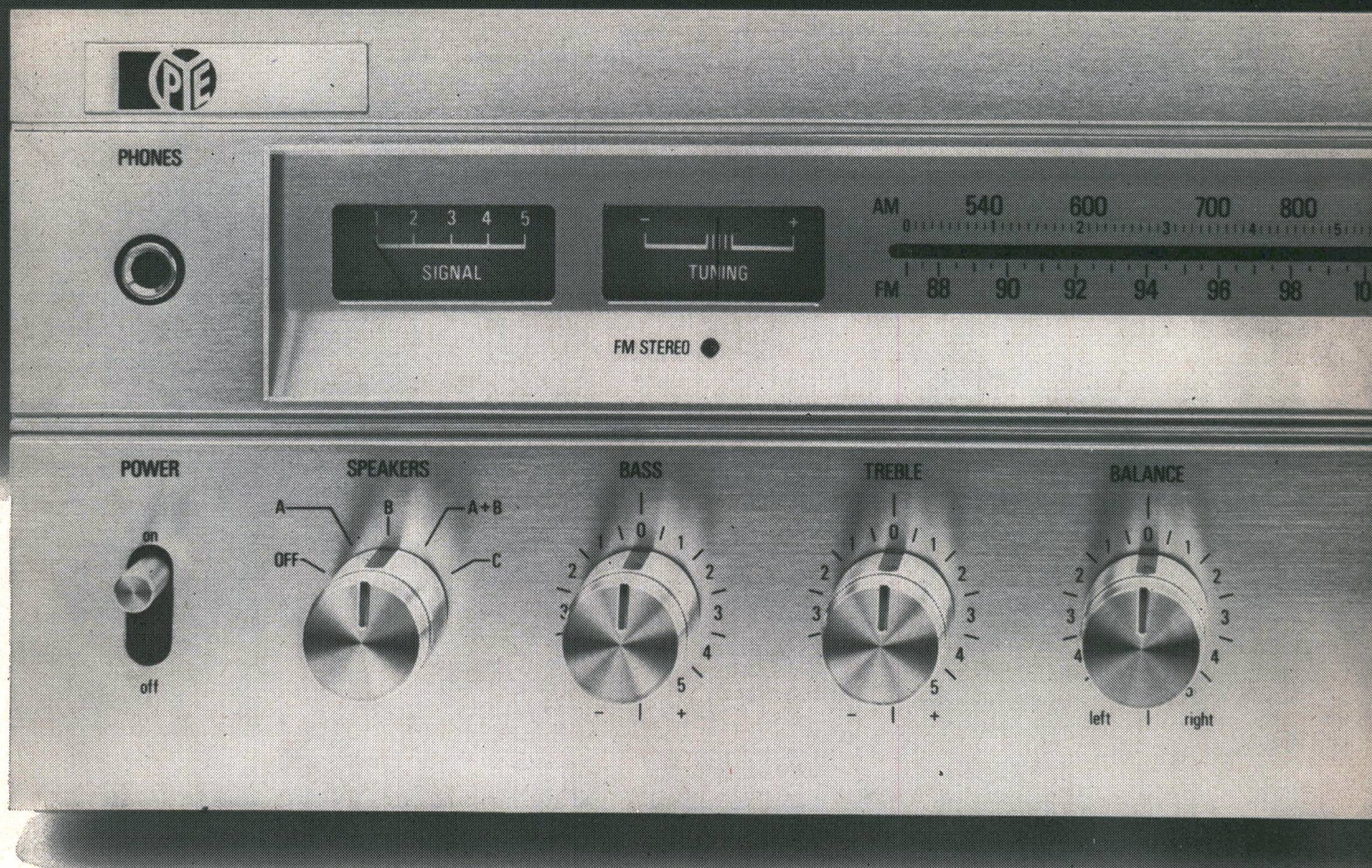
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THE PYE HI-FI SOUND PROJECT



AND WE CAN

The Pye Hi-Fi Sound Project is a new and comprehensive range of high performance, high fidelity equipment. The range covers amplifiers, tuners, receivers, speakers, turntables, a music centre... and more.

Pye has commissioned each separate model in the range from the best, most experienced source in the world. Speakers from Britain, receivers from Japan, turntables from West Germany. And in each source area Pye has selected a

manufacturer of unrivalled excellence.

Pye is the only British manufacturer to have taken this radical step.

The benefits are numerous.

Firstly, the equipment is designed to the most exacting of specifications, laid down by Pye, with the aim of bringing you performance of such a degree that other manufacturers will not be able to better it at the price. Compare the specifications and price of the receiver shown here and you'll see what we mean - 60 Watts per channel at 0.3% total harmonic distortion (0.06% harmonic distortion at 50 Watts) makes it a formidable piece of equipment. And these specifications err on the conservative side: already, independent authorities such as the Swedish Hi-Fi Institute are giving the Hi-Fi Sound Project range even better performance ratings than Pye have done.

Hand in hand with this has gone a single-minded insistence on quality. Over the years, Pye has gained an enviable reputation for the above average reliability we build into our products - reliability that stems from painstaking initial design allied to stringent selection of materials and components, and strict quality control. And since this equipment will be sold throughout the world, we regard built-in reliability as more important than ever.

The size of our world wide programme is also the main reason for the Hi-Fi Sound Project range being available at

TA 12000 RECEIVER AMPLIFIER SECTION

POWER OUTPUT: 60W* continuous per channel at 0.3% THD into 8 Ω over 20 - 20,000 Hz bandwidth.

DISTORTION: Harmonic distortion at 50W: 0.06%.
Intermodulation at 30W: 0.05%.

INPUTS: Phono (2), Tape (2, with A to B dubbing facility), Auxiliary, Microphone (with mixing facility).

TUNER SECTION

SENSITIVITY: AM: 60 μ V for 26 dB s/n. FM: 1.7 μ V acc to IHF.

TOTAL HARMONIC DISTORTION: Mono: 0.15%. Stereo: 0.25%.

FEATURES

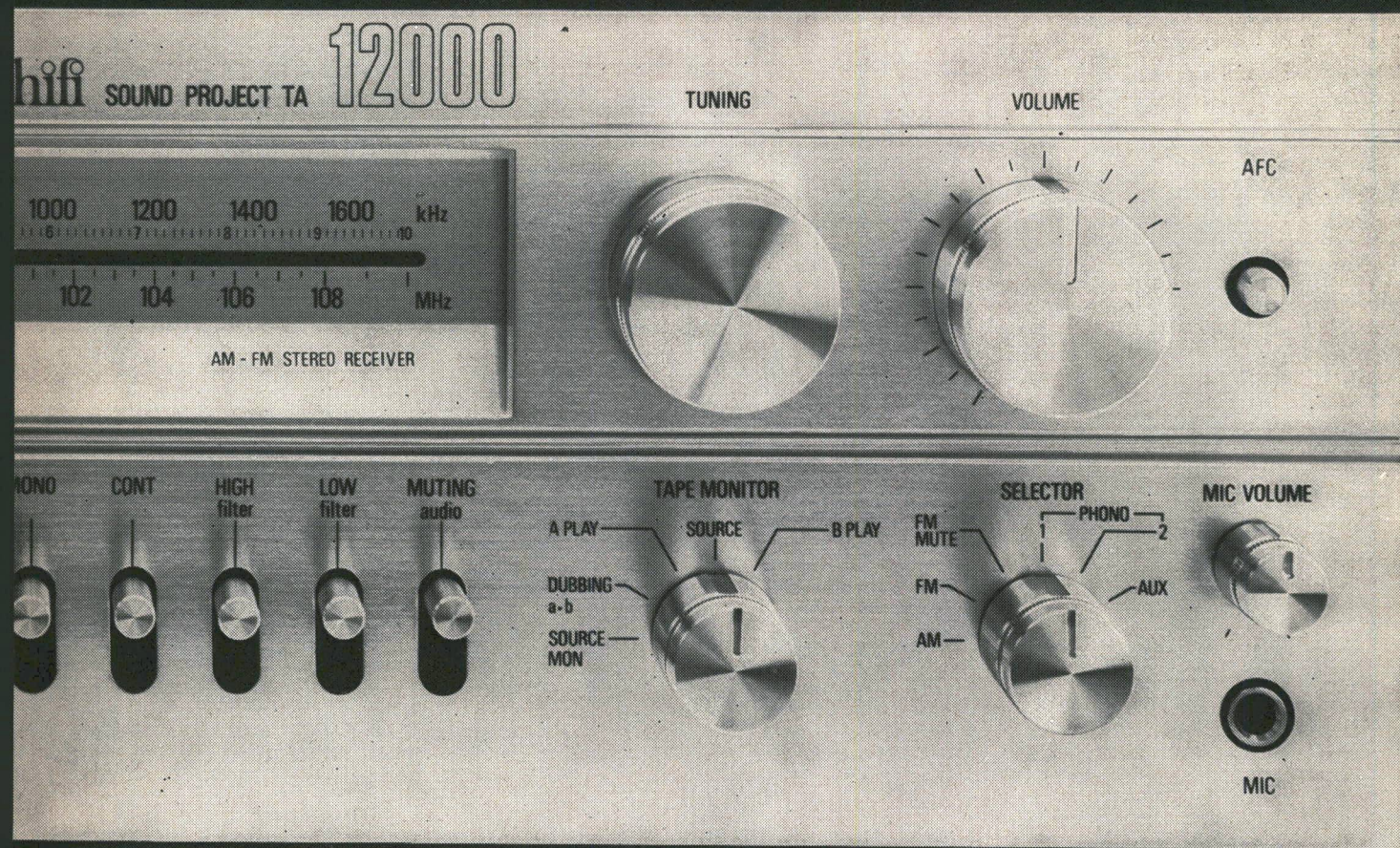
Separate signal strength and FM centre tuning meters. Smooth fly-wheel tuning control. Precise 41-step volume control. Provision for three separate speaker systems.

PRICE £339.00 (SRP)

*The independent Swedish Hi-Fi Institute measured this at 67 Watts.

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OBJECT RANGE IS UNIQUE



N PROVE IT.

such an attractive unit cost. You won't need to look for a dramatic discount in this equipment, because Pye, unlike some other brands have not set the recommended prices artificially high.

And finally, since Pye are making the Hi-Fi Sound Project range available only through selected local retailers throughout the country, you'll get the advice, and the service, you should be entitled to when purchasing a piece of equipment of this calibre. Moreover, every Pye dealer is a specialist in his own right – and he's backed by 25 Pye Local Service Centres should he need to call on one. No other range of hi-fi

equipment can offer you this kind of long-term service assurance.

So, the Pye Hi-Fi Sound Project isn't simply a new range of hi-fi equipment. It represents a unique approach to high fidelity: one in which the outstanding performance, quality and reliability of the equipment itself is combined with a highly competitive price, and the back up of an integrated, nationwide dealer and service network.

If you need any more proof, we suggest you listen to the equipment for yourself.

There'll be a dealer near you.

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TO: Hi-Fi Sound Project, Pye Limited, 137 Ditton Walk, Cambridge CB5 8QD.
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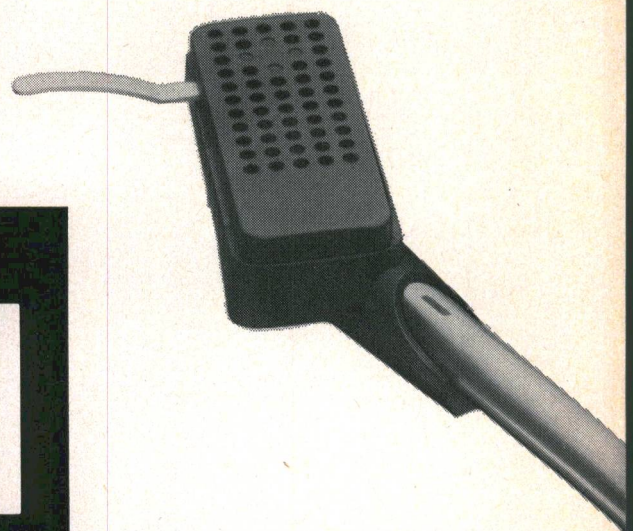
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You can rely on Pye

Dual



The best tonearm is just good enough



Dual turntables have a reputation for quality and reliability that is second to none world-wide.

Developed to a fine art over many generations in the black forest, one of the centres of precision engineering in Germany, after extensive research in the laws of sound reproduction.

The result: each element of a turntable scores its own fine points to contribute to the perfection of the whole. For instance: the straight Dual tonearm.

**How to identify the
world's finest tonearms***

Straight-line tubular shape provides maximum torsional rigidity and lowest effective mass.

Tracking force is applied with a tempered, flat-wound spiral spring, centred around the vertical pivot. Stylus force remains perpendicular to the record even if the turntable is not level.

Unique counterbalance contains two mechanical anti-resonance filters which are specially tuned to absorb parasitic resonances originating in the tonearm/cartridge system and chassis.

True four-point gimbal centres and pivots tonearm mass where vertical and horizontal axes intersect. The four

needle-point pivots are tempered and honed to produce microscopically smooth surfaces. Each pivot is matched to a ball-bearing race only 0,157 inches in diameter.

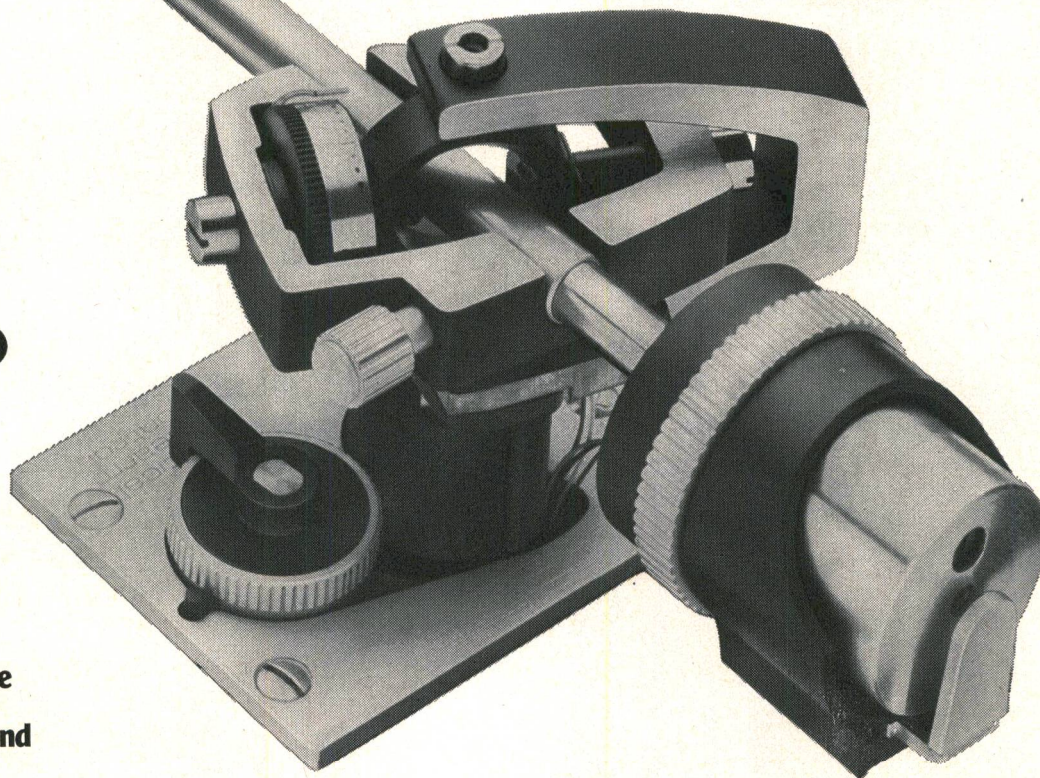
* The tonearm shown is part of our higher-priced turntables. But many of its precision features are found in our lowest-priced models: four-point gimbal, straight-line design; and controls for balance, tracking force and anti-skating.

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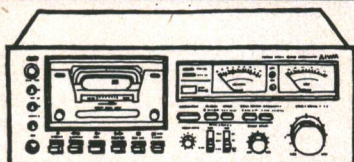
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in sound

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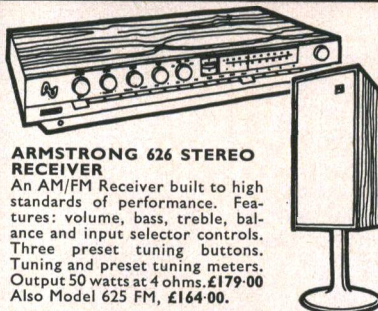
THE BEST HI-FI & AUDIO AT THE BEST PRICES ALWAYS



AIWA AD6550 Stereo CASSETTE DECK
Handsome styling combined with front loading and Dolby noise reduction system, plus other innovative features are rapidly establishing this model as a serious contender with Hi-Fi enthusiasts. Power consumption 10 watts. Wow and Flutter 0.05%. Features include: VU meters, peak pulse lights, damped cassette ejection and fine adjustment for LH (normal) tapes enabling tapes to be set at their optimum performance level.

£220.00

Also:
AIWA AD6300, £136.00; AIWA AD6400, £179.95; AIWA AD6500, £192.00.



ARMSTRONG 626 STEREO RECEIVER

An AM/FM Receiver built to high standards of performance. Features: volume, bass, treble, balance and input selector controls. Three preset tuning buttons. Tuning and preset tuning meters. Output 50 watts at 4 ohms. £179.00 Also Model 625 FM, £164.00.

ARMSTRONG 602 SPEAKER

In Teak or Rosewood, providing performance synonymous with Armstrong quality. Frequency response 55 Hz-20 kHz. Sensitivity 21 watts. Maximum power 100 watts. Impedance 8 ohms. £169.00 per pair.

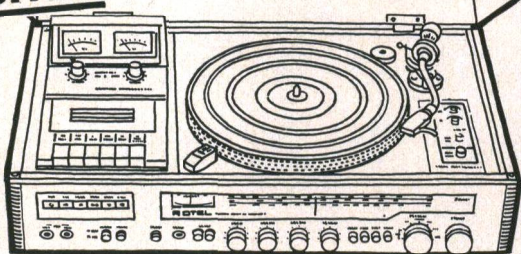
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ROTEL RM5010 HI-FI MUSIC CENTRE

Provides FM, MW and LW reception, a Dolby Cassette Recorder, a DC servo belt-drive turntable and an amplifier delivering 25 watts RMS per channel.

Features include: RECEIVER ● Audio muting ● Loudness boost ● Tape monitor ● Individual bass and loudness controls. TURNTABLE ● Stroboscope speed indication ● Speed control ● Anti-skating device ● Shure M75ED-2 Cartridge. CASSETTE RECORDER ● Superhard permalloy heads ● Tape selection for normal or chromium dioxide tapes.

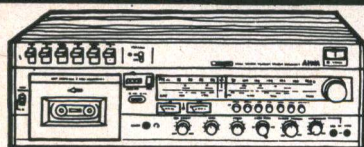
Hi-Fi reviewers have applauded the RM5010 for its high performance and value-for-money price, but now, at our price—it's astonishing value!



Rec. price £445.48

Special Offer £289.96

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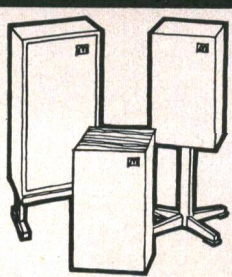
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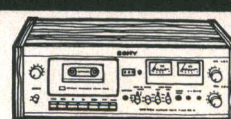
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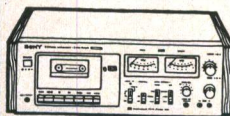
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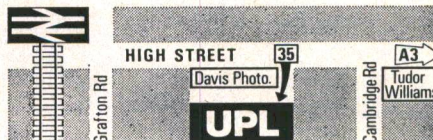
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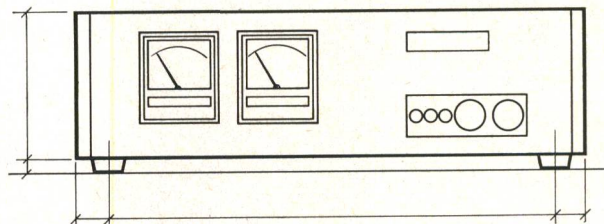
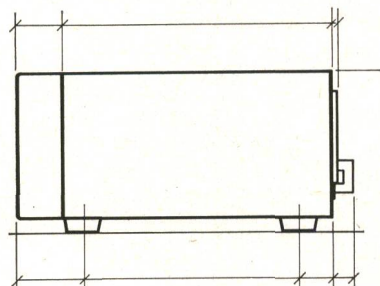
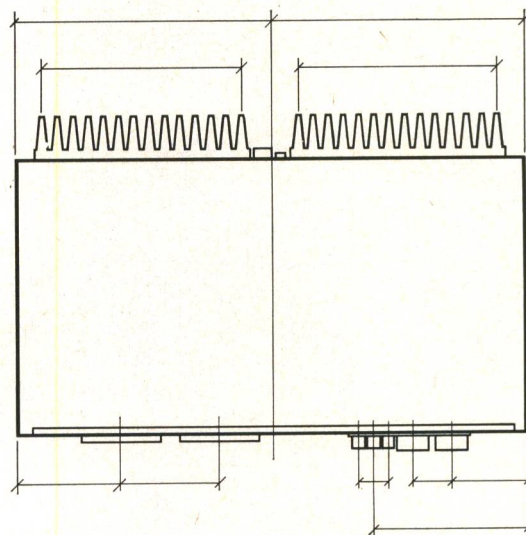
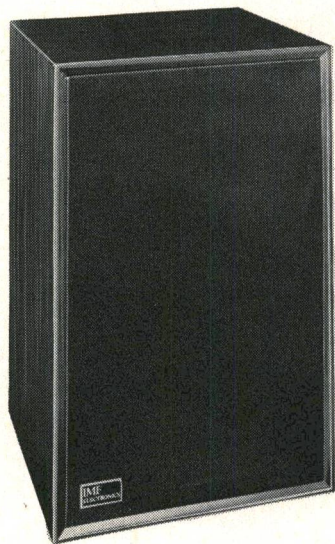


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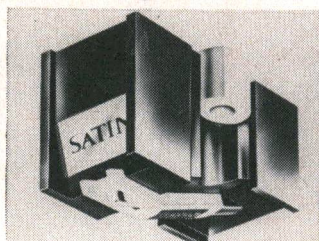
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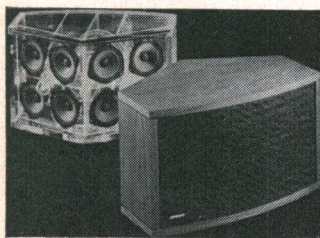
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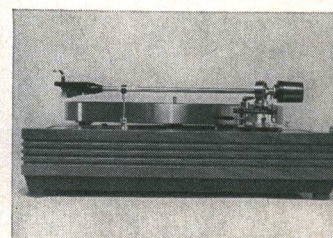
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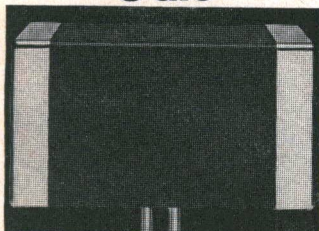
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Revox A740, B750
Sansui AU4900, AU5900
Sugden A48
Sony TA11, TA73, TA1630
Sony TA2650, TA3650
Technics SU7100, SU7300
Technics SU7700, SU8080
Yamaha CA410, CA610
Yamaha CA810, CA1010

TURNTABLES

Ariston RD11E
Beogram 1102, 1902
Beogram 4002, 6000
Connoisseur BD1, 2 & 3
Fons CQ30
Hitachi PS8, PS17
JVC JLA20, JLA15
Linn-Sondek LP12
Michell Reference Hydraulic
Michell Reference Electronic
Pioneer PL112D, PL115D
Pioneer PL510A, PL530
Revox Direct Drive
Sansui SR525P
Sony PS11, PS22
Sony PSX4, PSX6, PSX7
Technics SL20, SL23, SL22
Technics SL1900, SL1800, SL1700
Technics SL150, SL1500/II
Technics SL1400/II, SL1300/II
Transcriptions Skeleton, Round-table
Yamaha YP-211, YP-511

CASSETTE DECKS

Aiwa AD1250, AD6300
Aiwa AD6550, AD6800
Akai CS34D, CS702D
Akai GXC709D
Amstrad 7050, 7060
Beocord 1100, 5000
Hitachi D2315, D2310
JVC CD1740, KD21
JVC KD-35, KD2

National RS612
Nakamichi DT550, DT600
Pioneer CTF4040
Sansui SC3000, SC3003
Sony TC135, TC136
Sony TC158, TC177
Sony TC186, TC206, TC229
Tandberg TCD310, TCD330
Technico RS615, RS630
Technics RS678, 686
Yamaha TC511S, TC800GL

TAPE DECKS & RECORDERS

Akai 4000DS/II, GX215D
Grundig TK547, TK747
Revox A77, B77
Sony TC377, TC510-2
Tandberg 1521, 1041XD
Technics RS1500

TUNERS

Akai AT2200, AT2400
Amstrad EX303, 3000/II
Armstrong 623, 624
Hitachi FT340, FT300
JVC JTV10, JTV11
Lecson FM1
National ST2300, ST2400
Pioneer TX5500, TX5300
Revox A76, A720, B760
Sansui TU5900, TU7900
Sony ST11, ST73
Sony ST2950, ST3950
Technics ST7300, ST3500
Technics ST8080, ST9600
Yamaha CT410, CT610
Yamaha CT810, CT1010

RECEIVERS

Akai AA1010, AA1020
Amstrad 5050
Aiwa AF3060, 3090
Aiwa AX7400, AX7500
Armstrong 625, 626
Beomaster 901, 1100, 1900
Beomaster 2200, 2400
Beomaster 4400
Hitachi SR303L, 302
JVC JRS50, JRS100
National RE7860, SG25Q
Pioneer SX450, SX550
Sansui 551, 661
Sony STR11L, STR2800
Sony STR3800, STR4800
Tandberg TR2025, TR2040
Tandberg TR2055, TR2075
Technics SA5070, SA5160
Technics SA5270, SA5370
Yamaha CR200E, CR620
Yamaha CR820, CR420 etc.

SPEAKER SYSTEMS

Acoustic Research AR18, AR17, AR15, AR14
Beovox S30, S35, S45/2, S60

Beovox S75, M70, M75, M100
Bose 301, 901/III
Celestion Dittion 15XR, 11, 22
Celestion Dittion 33, 44, 25, 66
Celestion UL6, UL8, UL10
Chartwell PM100, PM200
IMF Compact II, Super-Compact
IMF ALS40, TLS50, TLS80/II
JR149, Super Woofer
Jordan-Watts Jumbo, Janet
Jordan-Watts Jupiter TLS
JBL L19, L40, L110
KEF Chorale, Corelli, etc.
KEF 103, 104, 105
Lecson LB1, SP1, HL1
Monitor Audio MA8, MA7
Monitor Audio MA5, MA4
Mordaunt-Short Pageants
Mordaunt-Short Festivals, Carnivals
Revox AX2/2, AX3/3
Rogers LS3/5A, Export Monitors
Sony G3, G5, G7
Spendor BC1, BC2, BC3
Technics SB4500, SB7000
Wharfedale Linton, Glendale
Wharfedale Teesdale, Dove-dale
Wharfedale E50, E70
Yamaha NS1000M

MUSIC CENTRES

Aiwa AF5050, AF5090
Akai AC3800L
Beocentre 2800, 3300
Beocentre 3600, 4600
Hitachi STD7785, 7680
JVC MF47L, MF5S
National SG1030, SG1090
National SG2070, SG3060
National SG2080L, SG3090L
Sony EX1K, EX2K
Sony HMK55, HMK77
Tandberg TR220GC

SPEAKER CHASSIS

Kef T27, B110
Kef B200, B139
Lowther PM6, PM7
Tannoy 10", 12", 15"

PICK-UP ARMS

Formula 4 Arm
Haddock GH228
SME 3009/II, 3009/S2
SME 3009/III

OTHERS

Decca Record Brush
Decca Record Cleaner
Earc
Watts Parastat
Zerostat
BIB accessories etc.

YOUR NEW JVC HI-FI COULD WIN YOU A VHS VIDEO RECORDER

Come in and listen to the superb JVC range of hi-fi. If you buy a JRS stereo receiver or a JVC-JLA40 or JLF50 direct-drive turntable before end of July 1978, you could win a JVC video recorder or portable radio/TV.

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JRS200
JRS300
JRS400
JRS600

Cassette Recorders

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CD1740
KD21
KD35 etc.

Turntables

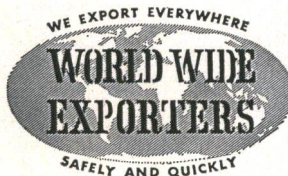
JLA20
JLA40
JLF50
QL70

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JAS10
JAS11
JAS31
JAS71

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Bristol Radford Hi-Fi 52-54 Gloucester Road, Bristol BS7 8BH. Tel: 0272 422709  <small>The Speaker Engineers</small>	Swindon TV & Hi-Fi Centre 91/92 Commercial Road, Swindon, Wilts. Tel: Swindon 28383 & 35 Castle Street, Cirencester, Gloucs. Tel: Cirencester 4756  <small>The Speaker Engineers</small>	Newport Hi-Fi Western Ltd. 52 Cambrian Road, Newport, Gwent. Tel: 0633 62790  <small>The Speaker Engineers</small>
Portsmouth Weston Hart Ltd. 84 London Road, North End, Portsmouth, Hants. Tel: 0705 62366  <small>The Speaker Engineers</small>	Bath Paul Green Hi-Fi Ltd. (with Harper Furnishings) Kensington Showrooms, London Road, Bath, Avon. Tel: 0225 316197  <small>The Speaker Engineers</small>	Summertown Horns 6 South Parade, Summertown, Oxford OX2 7JR Tel: 0865 511241  <small>The Speaker Engineers</small>
Somerton Watts Radio 1 West Street, Somerton, Somerset TA11 7PS. Tel: 0458 72440  <small>The Speaker Engineers</small>	Chandlers Ford Hampshire Audio Ltd. 8 & 12 Hursley Road, Chandlers Ford, Hants. Tel: 04215 2827  <small>The Speaker Engineers</small>	Farnham Lloyd & Keyworth 26-28 Downing Street, Farnham, Surrey. Tel: Farnham 5534  <small>The Speaker Engineers</small>



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TRM 750 Integrated Stereo Amplifier

Power plus performance. Equalizer and tone circuits have low-noise IC's plus there's a split power supply for a wide dynamic range. The power amplifier has pure direct-coupled complementary OCL circuitry. RMS output is 55W + 55W into 8 ohms from 20 Hz to 20kHz with no more than 0.15% total harmonic distortion. Full microphone mixing is possible, as are hookup facilities that allow use of up to two tape decks for deck-to-deck dubbing. Additionally features a 22-point attenuator for volume control without tracking error between channels. All controls on the new panel are user-oriented and located.

FAM 450 AM/FM Stereo Tuner

Economy and quality together in a unit that updates the popular FAM220. IC's assure high reliability, while keeping size and cost just right for enthusiasts on a budget but who still want the quality of separate amplifier and tuner in their home system. Frequency-linear 3-gang variable capacitor and twin group delay time, compressed ceramic filters with highly selective elements, and a 5-stage differential with limiting functions—all combine to yield intermediate amplification characterized by superb performance, low distortion. PLL type switching to preserve characteristics. Large 46-mm round flywheel for easy tuning. And light-up tuning indicator on the front panel.



TRM 650 Integrated Stereo Amplifier

The split plus-minus power supply used in the equalizer, microphone and tone amplifier ensures low-noise and distortion. The main amplifier has pure complementary OCL circuitry. RMS output is 30W + 30W into 8 ohms from 20Hz to 20kHz with no more than 0.2% total harmonic distortion. Fuse and relay protection circuitry doubles as a facility to eliminate 'pops' when power is switched ON and OFF. Mic mixing allows mixing of incoming signals from phone, tuner, or aux to be mixed with recorded signals. When dubbing using two decks, the tape monitor switch is set to ON in the case of dubbing from tape 1 to tape 2. Both a highly regulated transformer and a large 6,800uF capacitor are used.



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We've taken the blood, sweat and tears out of getting the best from your system.

Anyone who has tried to improve his hi-fi system will be aware of how difficult it is to iron out all the weaknesses.

So many components just aren't compatible.

At ADC, we've always considered the total hi-fi system when designing new components, to ensure that every element we contribute will significantly improve the entire performance.

The result is the ADC Compatibility Kit.

The kit consists of seven high compliance cartridges, two carbon fibre tonearms, a magnesium headshell and two multi-band frequency equalisers.

The new ADC cartridges

ADC's massive research programme has created a cartridge that we sign like a masterpiece.

This is the ADC ZLM Aliptic.

The Aliptic stylus shape extends the vertical bearing surface on the groove wall by 100%, and gives

greatly improved frequency response $\pm 1\text{dB}$ from 20Hz to 20kHz and $\pm 1\frac{1}{2}\text{dB}$ beyond to 26kHz.

You'll also find our new design criteria and other exciting innovations in the new ADC XLM MKIII, VLM MKIII and QLM MKIII series.

The ADC Compatibility Chart

Whatever turntable or tonearm you have you're almost certain to find the right cartridge for it in the ADC range.

Our new compatibility chart matches them to over 350 turntables and 47 tonearms.

We'll send you a copy on request.

Low mass carbon fibre tonearms

The LMF-1 and the LMF-2 are the new ADC tapered profile carbon fibre tonearms.

With effective masses of 5.5 and 8 grams respectively, they offer ideal resonance characteristics.

The LMF-2 has the advantage of a removable head.

The new Sound Shapers

Of all the improvements you can

make to your system, nothing will have such a dramatic effect as an ADC Sound Shaper.

It gives you total tone control.

If your speakers are good, they'll sound even better. Regardless of where they're placed.

Any acoustical imbalances in the room will disappear.

Ask your hi-fi dealer to demonstrate one.

Comprehensive leaflets on the ADC Compatibility Kit are available on request.



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**We make everything
very compatible.**

TANDBERG

ONLY TWO
HI-FI SYSTEMS INCLUDE
A FREE TURNTABLE.
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OFFER THEM BOTH.



SYSTEM 1200

Tandberg have put together two hi-fi systems of their own making. They're almost complete – except that Tandberg don't make turntables. So they're putting one in, free.

The ones they've decided to recommend, after some considerable thought and research, are the Thorens turntables (see overleaf). They match these systems as well as if Tandberg had made them. But read on.

THE SYSTEMS

The first is called, with startling originality, System 1200, mainly because it will cost you around £1,200. And if that makes you go a trifle tight-lipped, just consider what it comprises.

1 The TCD 330 cassette deck. Three heads give source and tape monitoring; you also get editing facilities, peak level meters and azimuth adjustment. It's so good it carries an extra four-year guarantee on parts. *Cassettes and Cartridges* magazine said:

"This is not a cheap cassette recorder; in fact it is at the upper end of the price bracket and is obviously intended for the wealthy and discriminating user.

"We will, therefore, say little about performance other than to express our unqualified envy of those who are fortunate enough to acquire such a delightful precision instrument."

(Denys Killick, Technical Editor)

2 The TR 2055 stereo receiver, with little touches like electronic tuning, muting between stations and more than 2 x 55 watts power output.

"The Tandberg TR 2055 is an outstandingly good tuner/amplifier and one that should give complete satisfaction for many years."

(John Gilbert, *Gramophone* magazine)

3 Two TL 5020 speakers. Four units in each cabinet, naturally, perfectly matching the 2055's power.

4 This is the part you don't pay for: the brand-new Thorens TD115 turntable. If you have a burning desire for some other make of turntable or you'd sooner keep the one you've got, then by all means make your own bargain with your dealer. You've got

£221 of Tandberg's money to bargain with, and anything you save can be spent on further Tandberg gear – mikes, cassettes, extra speakers, whatever. (Reckon on £125 if you buy System 700.)

WHICH BRINGS US TO THE SYSTEM 700.

It's made up of the TCD 310 Mark II cassette deck, with 3-motors, dual-capstan tape transport, which can also be used horizontally, wall-mounted or vertically with special feet provided. Plus the TR 2025L stereo receiver, which includes that much under-estimated joy, a brilliant 3-band radio. Plus matched TL 2520 speakers. It costs some £700, which doesn't sound much if you say it quickly.

But it includes the part you don't pay for, a Thorens TD166C turntable.

HOW TO FIND OUT MORE

Look up the technical details overleaf, and find your nearest Tandberg main dealer in the list. There you'll be able to examine and listen to the systems yourself. (If you're spending money on systems as good as Tandberg, God knows you should get a test-drive.)



These offers are open to UK residents only, and both close on 31 August 1978.

BUFF STUFF.

TCD 310 MARK II

Width 17", height 4 1/4", depth 9 1/4".

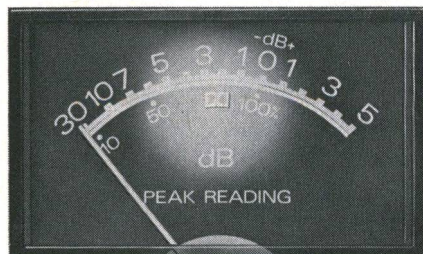
Black side-panels.

- Frequency range: 30 Hz to 16000 Hz (DIN 45 500)
- 3 motors.
- Tape transport system has 2 capstans and 2 pinch rollers (closed loop). Speed variations are reduced to a very low level.
- All operating modes electrically operated.
- Tandberg-developed input circuits, optimized for minimum noise regardless of source impedance.
- High quality magnetic heads.
- Dolby B* noise reduction system.
- Large peak level meters.
- Mixing in mono.
- Automatic stop for all modes.
- NEW: jack output for stereo headphones.
- NEW: built-in multiplex-filter for recording FM stereo programmes. Can be disconnected for extended frequency range when recording from other programme sources.
- Can be used in vertical position (feet supplied) or wall-hung.

TCD 330

Width 18 1/2", height 4 1/8", depth 9 1/8". Teak or rosewood finish. In many ways this compares favourably with open-reel machines: 3 heads, source and tape tests, editing facility, 3 motors, completely electronically controlled, remote control, servo controlled winding, dual-capstan closed loop tape path, Azimuth tape adjustment and Dolby*.

- Signal/noise ratio 65 dB minimum (DIN 45 500).
- Frequency range 20 to 20000 Hz (DIN 45 500).
- Speed tolerance $\pm 0.5\%$ maximum.
- Maximum speed variation 0.15% (DIN 45 500).
- Stable tape transport. Full control over tape movement with exceptionally gentle tape handling.
- Memory function (automatic stop during rewind at a chosen place).
- Tandberg-developed input circuits, optimized for minimum noise regardless of source impedance.



- Peak indicating meters—the only correct way to measure sound level after equalization. Also indicate playback level.
- Editing facility.
- Azimuth adjustment for optimum tape performance.
- Decoder for recording Dolbyized* FM programmes.
- Built-in MPX filter (can be disconnected

for extended frequency range when recording from another source other than stereo FM).

- Matched to all types of good quality tape.
- Adjustable output level.
- Front jack for stereo headphones (level controllable).

TR 2025L

Width 20 1/4", height 5 3/4", depth 12 3/4". Teak or rosewood finish.

THE FM SECTION

- MOSFETS, IC's and 3 x 4-pole ceramic filters providing extremely good sensitivity and selectivity.
- Automatic switchover to stereo.
- Automatic frequency control (AFC) disconnects itself during tuning and connects itself again when tuning is completed. Can also be operated manually.
- Heavy flywheel gives smooth, precise tuning.
- 2 large sensitive meters.
- Muting for quiet tuning.
- 3 pre-sets give positive station location; also excellent medium wave and long wave.

THE AUDIO SECTION

- Stereo amplifier with the same high quality as the more expensive model.
- DIN sockets for 2 tape cassette recorders. Both inputs have tape monitor facility.
- Input for transcription unit (mag. p.u.).
- Copying facilities for 2 tape recorders simultaneously.
- Low and high filters.
- Frequency/loudness compensation volume control.
- Front output jack for stereo headphones.

TR 2055

Width 20", height 6", depth 14". Teak or rosewood finish.

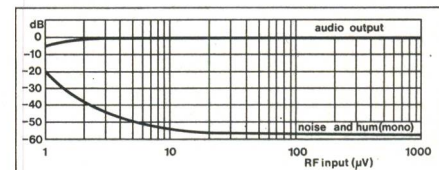
THE FM SECTION

- Significant improvements in important performance characteristics (image frequency rejection and spurious response rejection).
- MOSFET transistors, 4-pole ceramic filters, and integrated circuits (IC's).
- Signal/noise ratio 75 dB in stereo and 78 dB in mono (1HF)!
- Automatic switchover to FM stereo.
- Electronic tuning. Heavy flywheel makes station-finding precise and easy.
- Muting between stations.
- Large tuning meter and signal strength meter for accurate tuning.
- Equipped with 25 μ s de-emphasis button for Dolbyized* FM programmes.

THE AUDIO SECTION

- Inputs for 2 transcription units and 2 tape cassette recorders.
- The same wide dynamic range for transcription unit inputs as on the TR 2075 Mark II.
- Adjustable sensitivity for one of the transcription unit inputs and for both the tape cassette recorders.
- Both tape cassette recorder inputs have a tape monitor facility.
- Copying facilities for 2 tape cassette recorders.

- Front output jack for recording a tone-controlled programme. (TAPE CONTOUR OUT.)
- Frequency/loudness compensated volume control.
- 2 filters (low and high).
- 2 front jacks for stereo headphones.
- Noise-free mode selection (diode delay circuits).



Audio response and noise on RF input

SPEAKERS TL 2520

Outside dimensions: W: 21", H: 12", D: 8 3/4"

Enclosed volume: 25 litres

Frequency response: DIN 45 500, 43 - 20000

Hz Resonance frequency: 60 Hz

Sensitivity: DIN 45 500, 4 watts

Max, sine wave driving power: DIN 45 500, 40 watts

Music power: DIN 45 500, 65 watts

Impedance: 8 ohms

Size of speakers: Woofer 8", Mid-range 3 3/8", Tweeter 2"

SPEAKERS TL 5020

Outside dimensions: W: 25 3/4", H: 14 3/4", D: 11"

Enclosed volume: 50 litres

Frequency response: DIN 45 500, 33 - 20000

Hz Resonance frequency: 50 Hz

Sensitivity: DIN 45 500, 3 watts

Max, sine wave driving power: DIN 45 500, 60 watts

Music power: DIN 45 500, 100 watts

Impedance: 9 ohms

Size of speakers: Woofer 12", Mid-range 5", Tweeter 2 x 1" Dome

TURNTABLES

Thorens TD166C. Aluminium finish. Belt-drive transcription deck. Low-mass arm and Ortofon VMS20 cartridge.

New Thorens TD115. Black finish.

TD115**

RUMBLE UNWEIGHTED Better than -48 dB

DIN A

RUMBLE WEIGHTED Better than -68 dB DIN B

WOW AND FLUTTER $\pm 0.05\%$

TONE ARM EFFECTIVE MASS 7.5 gr

BEARING FRICTION >15 mg both planes

TD 166C

RUMBLE UNWEIGHTED -45 dB -DIN 45539

RUMBLE WEIGHTED -65 dB -DIN 45539

WOW AND FLUTTER $\pm 0.06\%$

TONE ARM EFFECTIVE MASS 7.5 gr

BEARING FRICTION >30 mg

*The name 'Dolby' is a registered trade mark of Dolby Laboratories Inc., USA.

** (Released May 1978.) Belt-drive, variable speed, automatic stop. New 'ortho-inertial' suspension system. Fitted Ortofon elliptical cartridge M20E or VMS20E.

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Luton—Terry-More Photographic

BERKSHIRE

Reading—B & B HiFi

BUCKINGHAMSHIRE

High Wycombe—Hughes HiFi

CHESHIRE

Chester—Hardman Radio
Chester—Newdawn HiFi

CUMBRIA

Barrow-in-Furness—Searle Audio
Carlisle—Misons

DERBYSHIRE

Chesterfield—Micron Audio
Derby—R. F. Potts

DEVON

Exeter—Howards

ESSEX

Basildon—Kelleys Radio
Braintree—Kelleys Radio
Brentwood—Kelleys Radio
Chelmsford—Kelleys Radio
Hadleigh—Kelleys Radio
Leigh-on-Sea—Kelleys Radio
Rayleigh—Vernon Collard
Romford—Kelleys Radio
Southend-on-Sea—Kelleys Radio

GREATER MANCHESTER

Bolton—H. D. Kirk (Stereoelectrics)
Burnley—H. Garlick The TV Centre
Manchester—Hardman Radio
Oldham—Look & Listen
Rusholme—Euliphon Audio
Urmston—Shannons Radio

HAMPSHIRE

Havant—Havant Radio Centre
Southampton—Hamilton Electronics

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Hitchin—The Record Shop
Radlett—The Recorderie
Watford—Herts HiFi

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Earby—H. Garlick The TV Centre
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Preston—Hardman Radio
Rawtenstall—Joe Cryer

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S.W.19—O'Briens
E.C.2—Nusound
W.1—Chappells
W.1—Dickens & Jones
W.1—D. H. Evans
W.1—R.E.W.
W.2—Nusound
W.C.1—Nusound
W.C.1—Imhofs
W.C.2—R.E.W.

MERSEYSIDE

Liverpool—Ace Audio
Liverpool—Hardman Radio

MIDDLESEX

Ealing—Ealing TV & HiFi
Edgware—Planet HiFi Centre
Hounslow—Templeton TV
Hounslow—Delta Radio
Northwood—The Recorderie
Stanmore—The Recorderie
Twickenham—Templeton TV

NOTTINGHAMSHIRE

Attenborough—John Kirk HiFi
Mansfield—Syd Booth
Nottingham—Land of HiFi

SOMERSET

Yeovil—Yeovil Audio

STAFFORDSHIRE

Stafford—Rowneys
Stone—Rowneys

SUFFOLK

Ipswich—Pages

SURREY

Croydon—Spalding Electrical
New Malden—Unilet Products
Woking—Aerco Records

SUSSEX (EAST)

Brighton—Hanningtons

SUSSEX (WEST)

East Grinstead—John Rees HiFi

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Stratford-on-Avon—JCV Music
Warwick—JCV Music

WEST MIDLANDS

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York—John Saville

YORKSHIRE (SOUTH)

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Sheffield—Micron Audio

YORKSHIRE (WEST)

Bradford—Vallances
Huddersfield—J. Wood & Sons
Leeds—Vallances

SCOTLAND

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Ayr—The Stereo Centre
Ayr—Vennal Audio Visual
Edinburgh—Audio Aids
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Glasgow—Eric M. Hamilton
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Lisburn—Manchester & Midland

CHANNEL ISLANDS

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TANDBERG

Tandberg (UK) Ltd, 81 Kirkstall Road, Leeds LS3 1HR

The Philips 'Super M' report says it's six of one...and

1 Tracking Margin

'Super M' better in middle and treble register than all other cartridges tested.

2 Relative Interchannel Balance

'Super M' (0.4db.) better than all other cartridges tested.

3 Sensitivity

'Super M' (1.8mV/Cm/s) better than all other cartridges tested.

4 Hum Induction

'Super M' and Ortofon (both 73db.) better than all other cartridges tested.

5 Compliance

'Super M' (42 C.U.) was one of the top two cartridges tested.

6 Mid-Frequency Cross-talk

'Super M' (37db.) was one of the top three cartridges tested.

But then it wasn't

The 'Super M' Report is likely to raise quite a few eye-brows. And lay some sacred hi-fi cows to rest.

It's probably the most extensive technical evaluation of cartridges ever made: some of the most sophisticated test equipment was employed for these in-depth studies.

Although commissioned by Philips, the tests were totally impartial: they were carried out under the supervision of the accredited hi-fi consultant Roger Driscoll in The Acoustics Laboratory of the Polytechnic of North London, and limitless outside technical resources were also at his disposal.

The findings can be simply summarised. Philips 'Super M' were not found to be light years ahead of the competition. But neither were any of the others.

In fact, the Report found that *overall* there was little to choose between the different cartridges.

Some performed better in certain areas, some in others (we've listed a number of the pro's and con's for Philips 'Super M' GP412 II above). But no cartridge stood out as markedly superior all-round.

So much for the hooah you read in some makers' advertising.

A few words about the tests. Cartridges were divided into two categories: higher priced and lower/medium priced. The facts given above are based on the higher priced cartridge comparisons which covered Philips 'Super M' GP412 II, Shure V15 III, ADC XLM II, AKG P8ES, Ortofon M15E, Ultimo DV 38/20A and the Microacoustics QDC 1e. The same general conclusions hold good in the lower/medium price category.

If you'd like a free synopsis of the report, write to: Super M Report, Audio Division, Consumer Relations Department, Philips Electrical Limited, City House, 420-430 London Road, Croydon CR9 3QR.



Simply years ahead.

on cartridge performance half a dozen of the other.

1 High Frequency Intermodulation
'Super M' (0.55%) not quite as good as Shure (0.25%) or ADC (0.19%) but still better than the rest.

2 Mid-band Intermodulation
'Super M' (1.7%) not quite as good as ADC (1.4%) or Ultimo (1.5%) but overall quite typical.

3 Square Wave Harmonic Distortion
'Super M' (1.5%) not quite as good as Ortofon (1%) or Microacoustics (1.25%) but better than the rest.

4 High Frequency Cross-talk
'Super M' (19db.) somewhat lower than average but of little practical significance.

5 Frequency Response
'Super M' (17KHz.) a little more limited but still quite satisfactory.

6 Vertical Distortion
'Super M' (3.4%) marginally high but unlikely to be noticed.

talking about price.

Alternatively, we can sum it up for you in 18 words.

When it comes to comparing cartridge performance, it's six of one and half-a-dozen of the other.

Price gives 'Super M' the edge.

Quite rightly, the Report concerned itself with technical evaluations.

But when choosing a cartridge, there's another important consideration: the price.

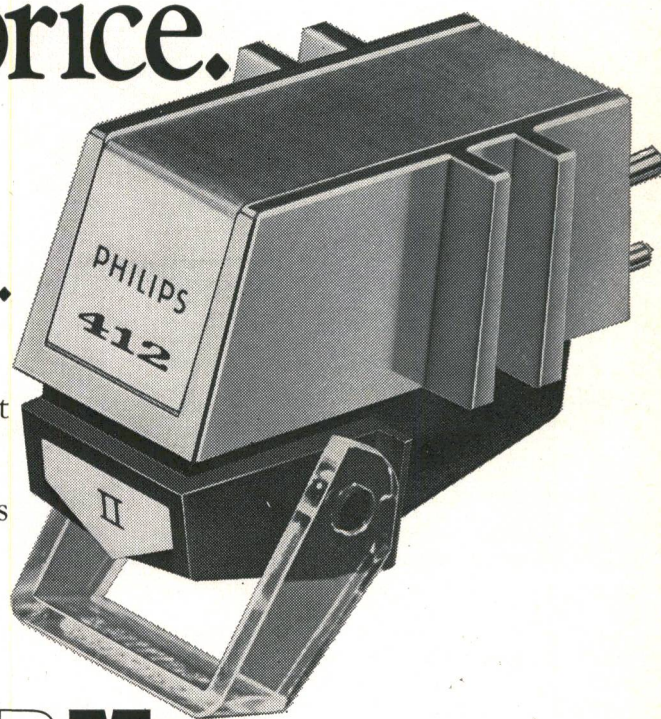
This test you can quite simply carry out yourself. Thumb through a few hi-fi mags and compare the cartridge prices listed in retailers' advertising. You'll find consistently that 'Super M' are substantially lower in price than any other comparable model.

The conclusion is obvious.

When cartridges are very similar in overall performance, it makes sense to buy the least expensive.

We think you'll agree, other cartridges have had it all their own way too long.

SUPER M



PHILIPS

If you like our names you'll love our prices



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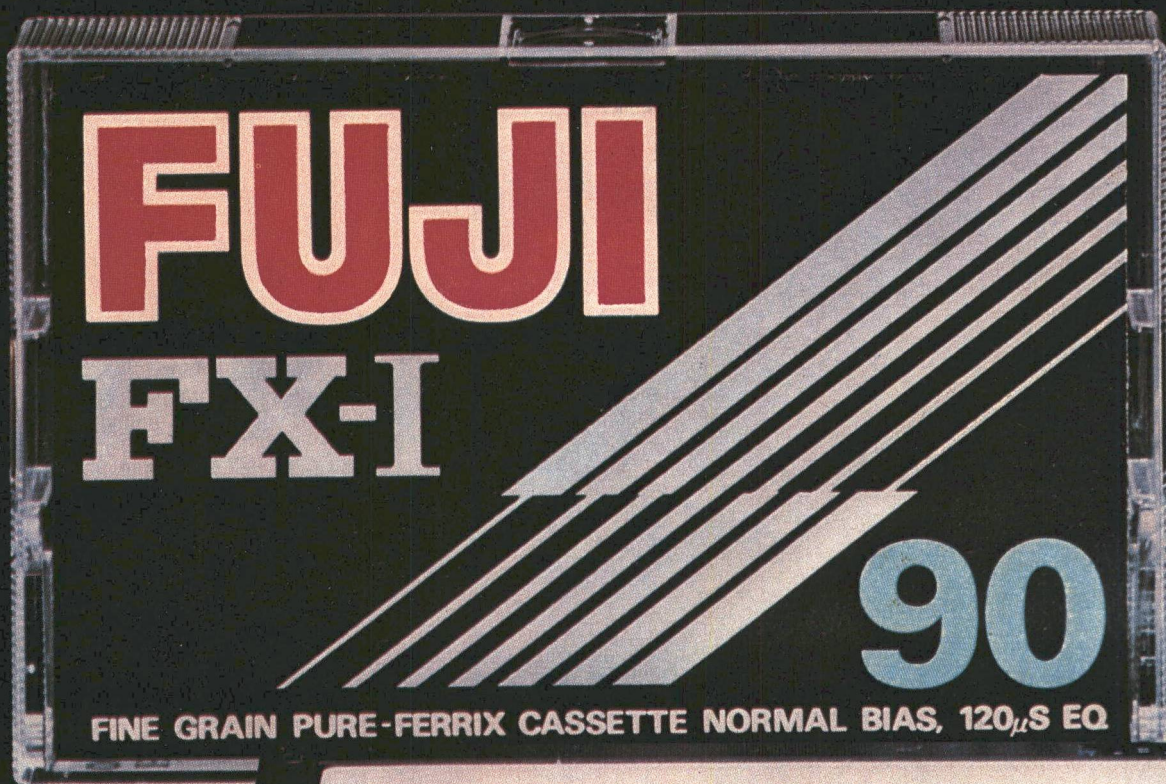
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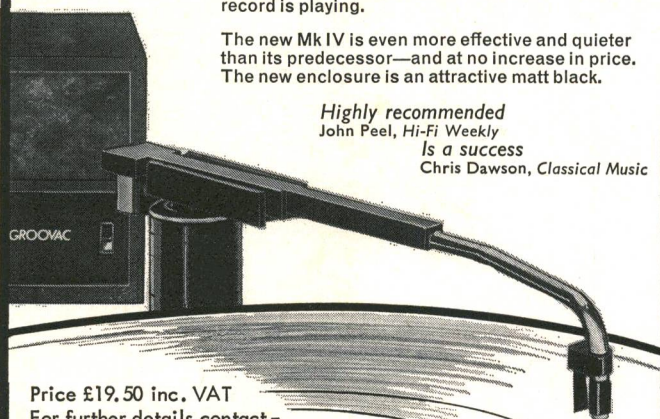
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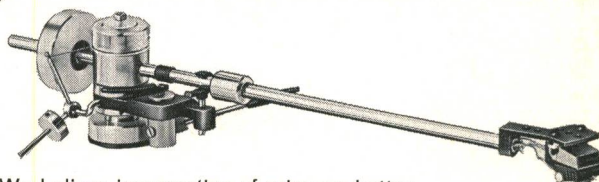
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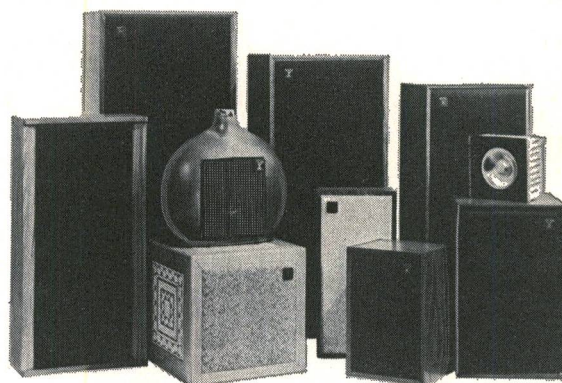
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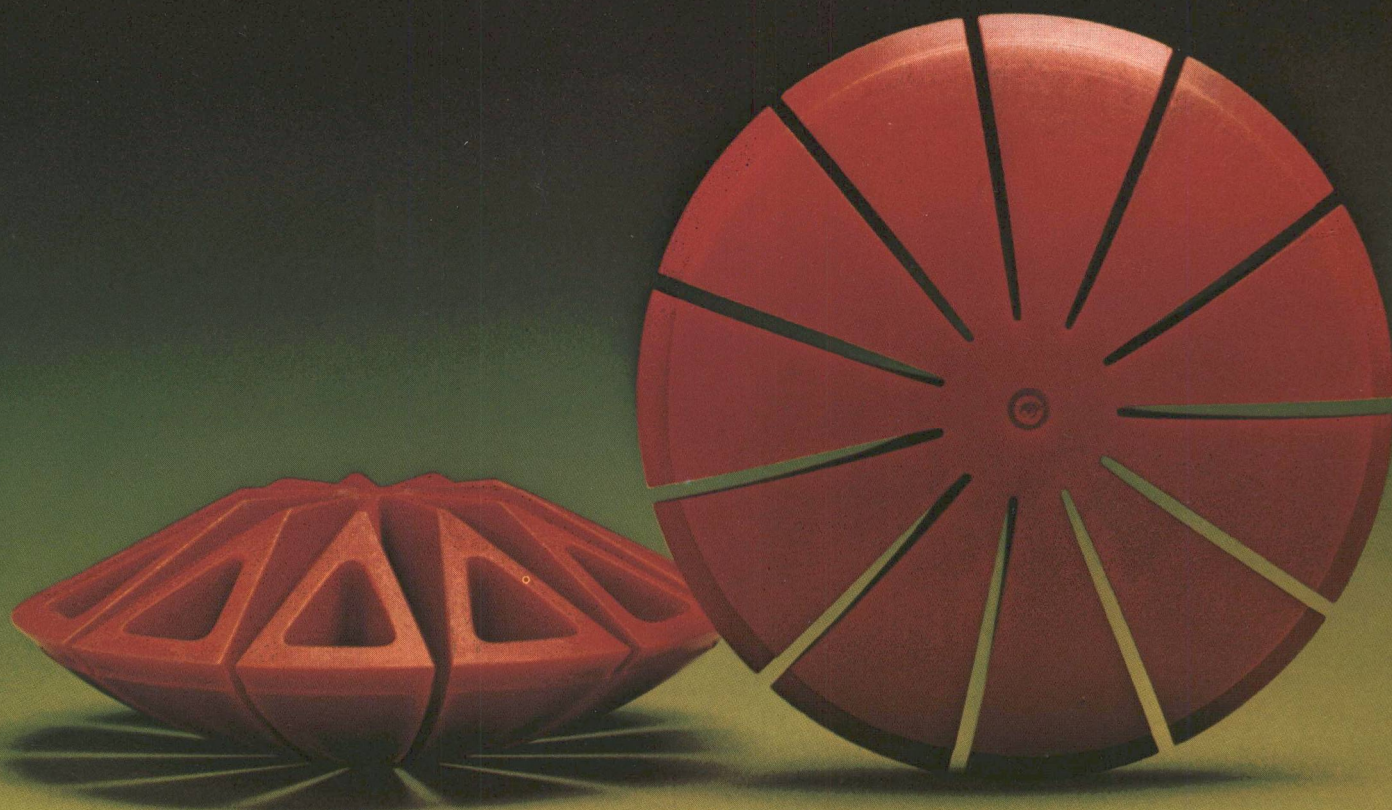
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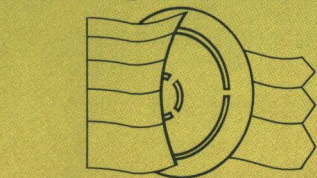


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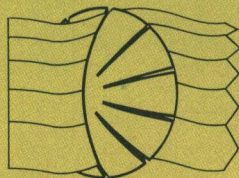


It may not look like much, but this simple, innocent-looking disk brings you closer to the fullest possible sound in the high frequencies. Called the "Tangerine™," it's a brand new patented radial phase plug. And we're the only one who has it.

We build it into our high-frequency compression drivers on our Model 15 and 19 speakers. That's why they sound more natural and as close to live sound as you can get.



Circumferential Phase Plug



Tangerine Radial Phase Plug

Until now, the old circumferential phase plugs put up obstacles to high frequencies. By forcing sound through evenly spaced slots, the plug developed its own undesirable acoustic characteristics. Because the distances between slots were even, certain high frequencies never made it through.

That's why we came up with a better idea. Instead of circumferential slots, we have radials. The prime number of the slots and the tapered distances between them provide a clear path to high frequencies. As a result, you

get super-high efficiency and greatly extended high-frequency response. A much wider band of clear and natural highs, unbroken by any artificial barrier.

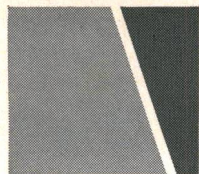
After filling in the highs, we created a unique dividing network for our Models 15 and 19. It has a built-in dual-range equalizer so you can achieve variable equalization of mid and high frequencies. The combination of a dual-box design and tuned vent offers precise internal volume and enclosure tuning. The outcome is an unheard-of low frequency response: the best ratio of lower limit vs. sensitivity yet.

It's not surprising that all these improvements in sound technology were made by Altec Lansing. The name that's been the number one choice of professionals for over forty years.

For our free, full-line catalog and the name of your nearest Altec Lansing dealer. Write: Altec Sound Products, Ltd., 17 Park Place, Stevenage, Hertfordshire, SG1 1DU, England.



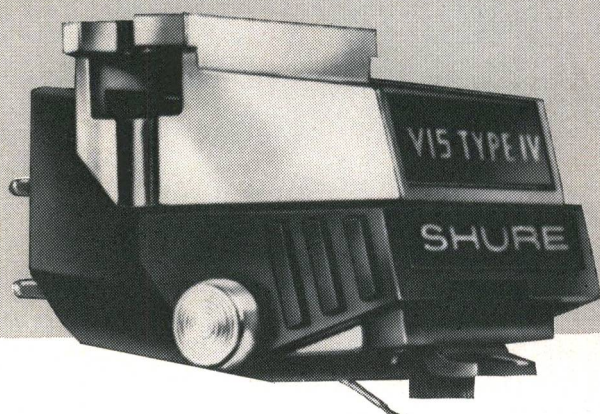
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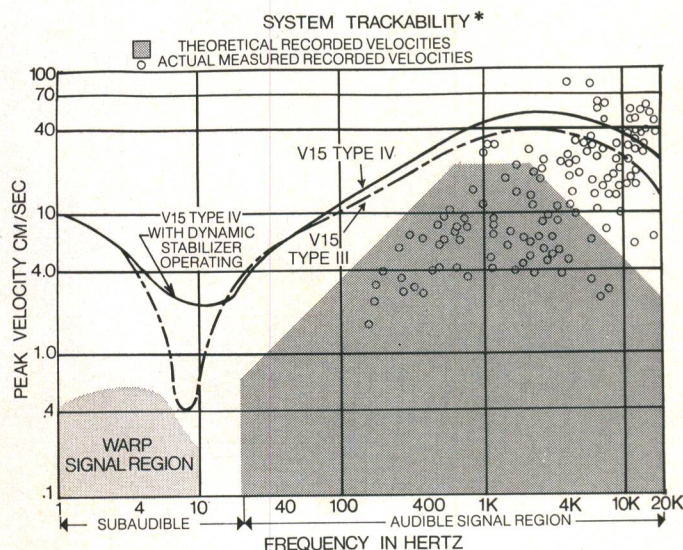


The creation of the new V15 Type IV is a tour de force in innovative engineering. The challenge was to design a cartridge that would transcend all existing cartridges in musical transparency, technical excellence, and uniformity. The unprecedented research and design disciplines that were brought to bear on this challenge over a period of several years have resulted in an altogether new pickup system that exceeds previous performance levels by a significant degree—not merely in one parameter, but in totality.

In fact, this pickup system has prevailed simultaneously over several extremely difficult music re-creation problems which, until now, have defied practical solutions. Most of all, this is an eminently musical cartridge which is a delight to the critical ear, regardless of programme material or the rigorous demands of today's most technically advanced recordings.

THE V15 TYPE IV OFFERS:

- Demonstrably improved trackability across the entire audible spectrum—especially in the critical mid- and high-frequency areas.



- Dynamically stabilized tracking overcomes record-warp caused problems, such as fluctuating tracking force, varying tracking angle and wow.
- Electrostatic neutralization of the record surface minimizes three separate problems: static discharge; electrostatic attraction of the cartridge to the record; and attraction of dust to the record.
- An effective dust and lint removal system.
- A Hyperelliptical stylus tip configuration dramatically reduces both harmonic and intermodulation distortion.
- Ultra-flat response—individually tested to within ± 1 dB.
- Lowered effective mass of moving system results in reduced dynamic mechanical impedance for superb performance at ultra-light tracking forces.

For more information on this remarkable new cartridge write for the V15 Type IV Product Brochure and read for yourself how far Shure research and development has advanced the state of the art.



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SOUND THINKING!

AT 35 MOSCOW ROAD, where thoroughgoing knowledge and unequalled experience of Audio merges with a deep understanding of music, you will invariably encounter sound thinking about every aspect of Hi-Fi. After 35 years as specialists in this field ("The doyen of hi-fi music"—Penguin's *London Shopping Guide*), we are not overly impressed by technical jargon or statistics: what we care about are musical results, reliability, domestic convenience and, by no means least, value for money. Musical performance must be paramount, and we aim for sound of the utmost naturalness, not 'technicolor' thrills. Reliability, too, rates a high priority, since it is our policy, wherever geographically possible, to install and to maintain all equipment purchased from us, and we no less than our clients would suffer if insufficient attention were paid to this factor. Domestic convenience means not only helping you choose the right equipment for the surroundings, but providing any necessary fittings—ready-made or custom-built—to blend whatever you require into your home (and, where necessary, arranging extensions into other rooms), while our advice is invariably directed at making the very most of whatever sum you are prepared to lay out.

Although, in general, we favour 'separates' for a variety of reasons, we also stock some selected Music Centres, provided the latter do not include speakers as part of the 'package'. Speakers are, without question, the

dominant audio components, and our hand-picked range—from the Videotone D100 at around £40 per pair to the new Rogers 'state of the art' system costing over £800—may well surprise you since it contains few of the most widely advertised names. Come and hear the magnificent Harbeth HL Monitors (today's outstanding domestic loudspeakers), the astonishing BBC-designed LS3/5A Monitors (marvellous sound from tiny enclosures) and the new Audiomaster MLS-1, in our view the finest speaker yet produced for those not prepared to spend over £100 per pair. Other recent arrivals which we warmly recommend include the JVC KD720 and KD12 Dolby cassette decks, the splendid JVC-JLF50 direct-drive auto-turnstile (especially if fitted with the top AKG cartridge) and, for budget systems, the belt-driven Garrard SP25 Mk V module plus the JVC JAS10 amplifier.

LIVE RECORD REVIEW

Every Saturday afternoon for over 20 years music-lovers have been flocking to our studio for *LIVE RECORD REVIEW*, our weekly record recital devoted to the latest classical releases (2 o'clock to 4.30). Why not join this happy throng when next you have some time to spare? You can come and go as you please and, while there, listen at ease to the finest new recordings on a range of superb equipment. Afterwards there is plenty of time to discuss musical and audio topics.

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The key to Pixall's success lies in its specially formulated adhesive tape, designed not merely to remove surface dust but more specifically to lift and dispose of damaging microdust particles, embedded deep inside the grooves.

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WAR

THE SMALLER OXIDE CASSETTES CAN IMP

Let's be accurate.

The quality of sound you get from a tape cassette depends on a large number of factors.

But one of the most important of these is the size and number of the ferric oxide particles contained in the tape's magnetic coating.

The smaller the particles, the more there are of them.

And the more particles there are, the more sensitive the tape.

The tiny super ferric oxide particles on Scotch High Energy Tape are very much smaller than those on standard low-noise tapes/cassettes.

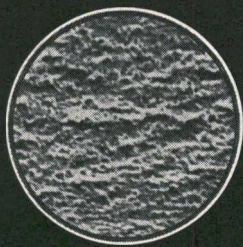
Which makes High Energy Tape a very sensitive tape indeed.

In fact, High Energy picks up sounds that standard tape cassettes can't handle.

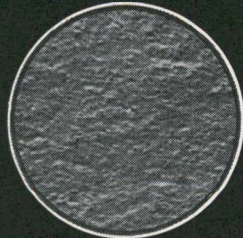
And what that means is simply better hearing for you.

Available wherever better tape cassettes are sold, Scotch High Energy Cassettes are compatible with any good hi-fi equipment.

And selling, as they do, at about £1.50 or less (90 minute cassette) you'd be hard pressed to find a better way to improve your hearing.



Unretouched photomicrograph of standard tape surface. The large ridges and valleys are caused by the larger oxide particles.



Unretouched photomicrograph of Scotch High Energy tape surface. Note the smoother contoured finish from the smaller super-ferric particles.



The larger oxide particles on a standard low-noise cassette tape surface can be compared to the coarser grains of a 'fast' photographic film.

Result: the sound you get from standard cassettes is never as pure or clear as your ear would like it to be.

NING:

PARTICLES OF SCOTCH ROVE YOUR HEARING



The smaller, more densely-packed particles of super-ferric Scotch High Energy Tape are like the fine grains of a slower photographic film. The reproduction is always crisp and highly defined.

Result: the sound you get from Scotch High Energy Tape means better hearing for your money.

THE MAJOR ADVANTAGES OF SCOTCH HIGH ENERGY CASSETTES

- 1. Louder sound:** High Energy gives 4 db more high-frequency output (9 to 10 db more than standard cassettes).
- 2. Purer sound:** High Energy has excellent signal-to-noise ratio (+57 db dynamic range) for less howl and hiss than standard cassettes.
- 3. Truer sound:** High Energy gives minimum distortion (-37 db at 315 Hz) for maximum fidelity.
- 4. Greater tape reliability:** The pre-tensiled polyester tape won't shrink or stretch, so your recordings always stay true to the original sound.
- 5. Greater mechanical reliability:** High Energy Cassettes are assembled automatically under the strictest quality control conditions. Automatic assembly assures fault-free mechanics for dependable, jam-free playing that's guaranteed.
- 6. Wider compatibility:** High Energy is compatible with all types of sound equipment.



3M
3M and Scotch are trade marks.

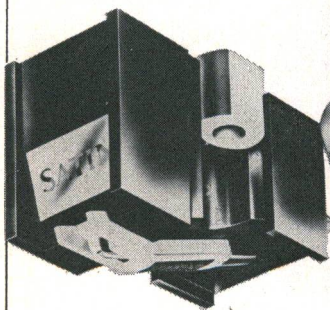
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BREAK-
THROUGH**

SATIN M-18E

Moving Coil Cartridge which doesn't require a step-up transformer or pre-amplifier. With user replaceable stylus.

STYLUS
0.2 x 0.8 mil (Elliptical)
CANTILEVER
Aluminium alloy
TRACKING FORCE
0.75-1.5 g
OUTPUT LEVEL at 1KHz
(for 50mm/sec RMS 45°)
2.0mV ± 2dB
FREQUENCY RANGE
10Hz-30KHz
CROSS TALK at 1KHz
30dB
COMPLIANCE
15 x 10⁻⁶cm/dyne
WEIGHT
9.5 g

Around £130



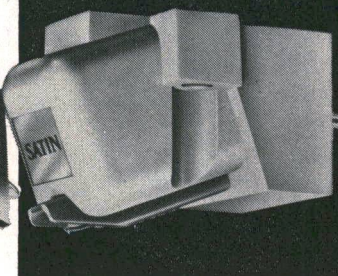
**PRICE
BREAK-
THROUGH**

SATIN M-117G

Moving Coil Cartridge which doesn't require a step-up transformer or pre-amplifier. With user replaceable stylus.

STYLUS
0.2 x 0.8 mil (Elliptical)
CANTILEVER
Aluminium alloy
TRACKING FORCE
1.0-2.0 g
OUTPUT LEVEL at 1KHz
(for 50mm/sec RMS 45°)
3.0mV ± 2dB
FREQUENCY RANGE
20Hz-25KHz
CROSS TALK at 1KHz
25dB
COMPLIANCE
12 x 10⁻⁶cm/dyne
WEIGHT
9.2 g

Around £70



Satin

Moving Coil Cartridges

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(It fits virtually any).
The results are so impressive, they're well worth discussing.
For a start, the design is revolutionary.
It features a precision engineered pneumatic piston that forms a low friction tonearm/cartridge damper to cushion the cartridge from every warp.
For the weight-conscious, it weighs less than a gramme.
Some of its more important features include minimising subsonic woofer flutter, reducing low frequency resonance peaks by as much as 18dB, improving trackability and reducing record and cartridge wear.
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This piezoelectric pistol is the ultimate anti-static device. A slow squeeze and release of the trigger eliminates virtually all dust-attracting static from records and dustcovers.
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up on record and dustcover surfaces. It's very simple to use, without any wires to plug in or batteries to replace.
With average use, say 15 times a day, it will last more than ten years, and together with record cleaners such as the D3 Discwasher System, will greatly prolong the life of your records and stylus.
£6.99 inc VAT

THE NEW D3 DISCWASHER SYSTEM

It takes a very special brush to remove micro-dust that could become welded to groove walls by stylus pressure.
The Discwasher brush with its unique angled micro-fibre fabric is the most efficient way to pick up and absorb micro-dust.
The fabric, on its absorbent pad, is mounted on a walnut handle

THE NEW SC-1 STYLUS CLEANER

Record life, stylus life and quality of sound are all dramatically reduced when the diamond accumulates a coating of dust and dirt.
A stylus cleaner has to be strong enough to remove this waxy coating, yet gentle enough to protect the delicate cartridge cantilever assembly.
The SC-1 achieves this by providing the perfect combination

of bristle density and stiffness. Two drops of D3 cleaning fluid add to its highly efficient cleaning action.
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Gold has one third the bulk resistivity of other standard connector metals.
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The cables are of ultra-low capacitance, with stranded centre wires and steel spring relief, at each end.
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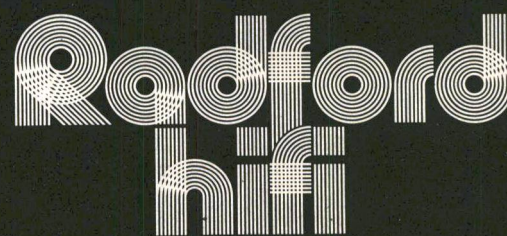
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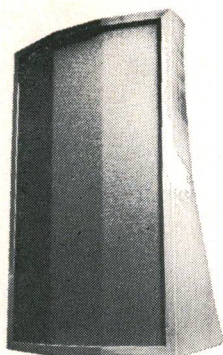
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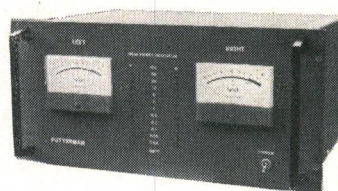
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FUTTERMANS

This is another fine audio product retailed only by Guildford Hi-Fi. It is so good, but so scarce, that there is just not enough to go round. This valve design has been around for many years and has been manufactured only on a custom-made basis in the USA. The specifications as with all valve equipment is modest but the sound is incomparable. When allied with the Paragon preamp the combination is unbeatable.



MERIDIAN

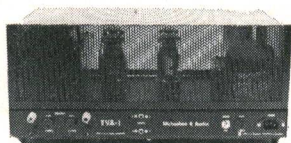
"Why should I pay £330 for a dinky little amplifier that's got only 35 lousy watts per channel, no filters, no headphones jack, and not even an on-off light. Thus might the acoustically unsophisticated rightly react to the spartan simplicity of the Boothroyd-Stewart Meridian amplifiers. Any such reservations should quickly be dispelled after a short listening spell. It is especially adept at demolishing the pretensions of many highly regarded (and more expensive) muscular oriental amplifiers. 50 and 100 watt versions are also available.



REVOX

We were standing tall when the representative of Bauch pinned our "Revox B dealership" badge on our heaving bosom. After all, they have been acknowledged as the manufacturers of the finest tape deck ever. Now they are introducing a complete product range that seeks to achieve

the same status for a digital fm tuner (B760) and integrated amplifier (B750) and a radial-tracking turntable that must leave the Japanese gasping with disbelief and envy. 'Nuff said, just hear it all at GHF and draw your own conclusions.



SOUND LEASE

The Soundlease TVA-1 is the first product from an aspiring pair of designers, Messrs Austen and Michaelson who are convinced that value technology is enjoying a renaissance of popularity. It is of meticulous construction and indeed its only

drawback is its hernia-inducing weight of 5 stone 10. Nominally 50 watts per channel, it is an ideal companion to the Paragon preamplifier which allows you to listen to the music once more and not the equipment.



PARAGON

Paragon is not too well known in this country since we are the only shop bringing them in from the USA. We don't advertise them heavily since they are in such scarcity, even in the States. If your hearing hasn't been permanently impaired and you can still appreciate the sound of a live orchestra, we are sure you will never want to return to the screeching, edgy, constructed, sterile sound that emanates from transistor phono preamps. Strong stuff, but we believe a listen will convince you. The Paragon system preamp is £450 - while the model 12A is £895.00.

We also recommend an audition of the following high-quality equipment: Linn Sondek LP12 turntable (alas, nothing seems to approach it for quality), ADC carbon fibre arms and Grace G707 arms, cartridges by ADC, AKG, Decca, Grado, Sonus, and Stanton. For the impoverished but discriminating music lover we have the Dual CS502 turntable and for the extremely patient, the Rega Planar II & III (up to a year's wait). We also have the commendable A & R A60 amplifier, the Enigma variations, and Quad 33/405 amplifiers. Also recommended are the Technics and Nakamichi amps and tuners. Among speakers one should hear the Dahlquist, Harbeth, Gale, B & W, and the highly recommended Tangent range. We also recommend the new LQZ speaker cables and Gold-ens signal leads for an improvement in your present equipment.

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The NEAL 302. Incorporating a 3-motor mechanism, controlled by a full solid state logic system actuated by ultra light touch buttons, this is the machine used by top recording studios and broadcasting stations, for quality cassette copies and for in-cassette duplication masters.

NEAL FERROGRAPH
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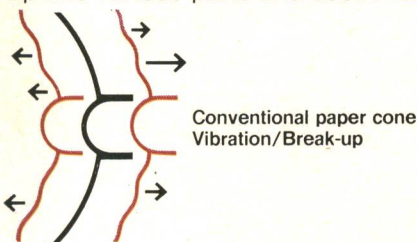
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Gathered Edge for
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sound reproduction.

Hitachi announces a speaker with metal cone and gathered edge, offering near-perfect piston movement.

Ideally, the cone of a loudspeaker should perform a perfect piston movement: the total cone surface should make its forward and rearward excursions together, without any section moving ahead or staying behind. This requires that the cone material meets two mutually exclusive demands. It must be extremely light, because the lower a cone's moving mass, the better it can follow the excursions dictated by the audio signal. Secondly, it must be extremely stiff, because only a very stiff cone can push against air without momentarily breaking up into various parts and sections.

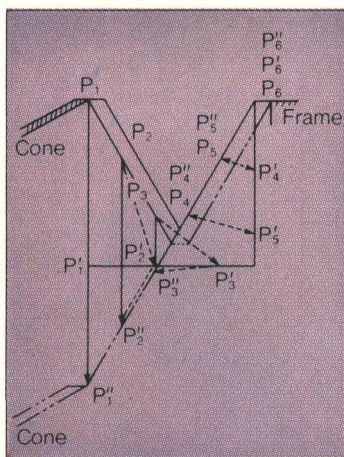


Only an organisation as vast as Hitachi could summon the resources to conduct basic research into possible new cone materials. Years of experimenting led to the all metal cone now used in the Hitachi HS-530, for example. This cone *does* fulfill the conflicting demands—it is at the same time very stiff and very light. So it does perform a near perfect piston movement, accurately trans-

lating electrical signals into sound pressure waves.



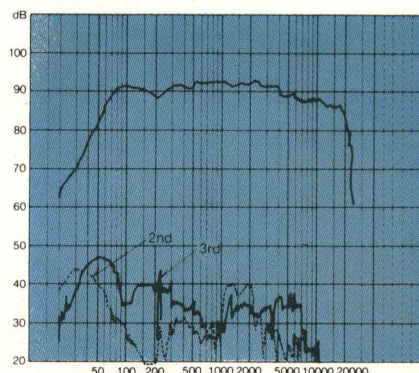
The cone alone wasn't enough, though. A way had to be found to keep it precisely centred while allowing it full freedom of movement in its axial direction. For this, Hitachi had to develop a special edge construction called the gathered edge which is rigid in a radial direction but extremely pliant along the cone axis.



Patented gathered edge principle

This metal cone/gathered edge principle is now applied to the new HS-530 and HS-330 three way

speaker systems. Its advantages are evident from the frequency response and harmonic distortion curves; and even more so from the accuracy in sound reproduction that a careful listening test will reveal.



HS-530 Frequency Response. 2nd & 3rd Harmonic chart.

Hopefully, all hi-fi speakers will sound this clean someday. Until then, the Hitachi metal cone principle represents the standard of cleanliness in signal-to-sound conversion.

HS-330 3-way speaker system
Frequency response: 40—18,000Hz
Input impedance: 6 ohms
Output level: 92dB (2.83V/1m)
Maximum input: 100W (at peak level)

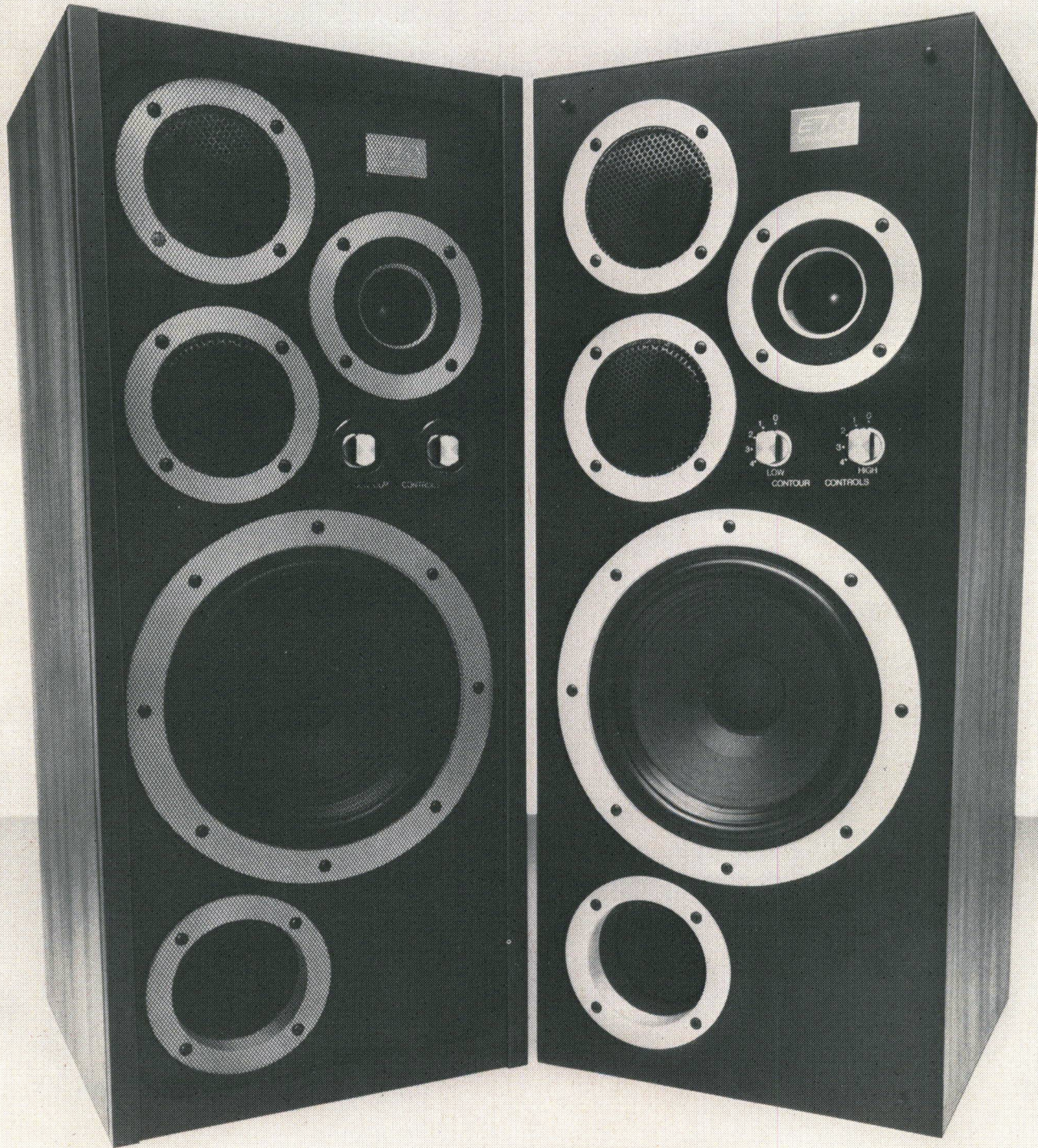
HS-530 3-way speaker system
Frequency response: 40—20,000Hz
Input impedance: 6 ohms
Output level: 92dB (2.83V/1m)
Maximum input: 120W (at peak level)

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E70's (above) 100 watts DIN, 1 watt produces 94 dB at 1 metre, 100 watts produce 114 dB at 1 metre. E50's 70 watts DIN, 1 watt produces 94 dB at 1 metre, 70 watts produce 112 dB at 1 metre.

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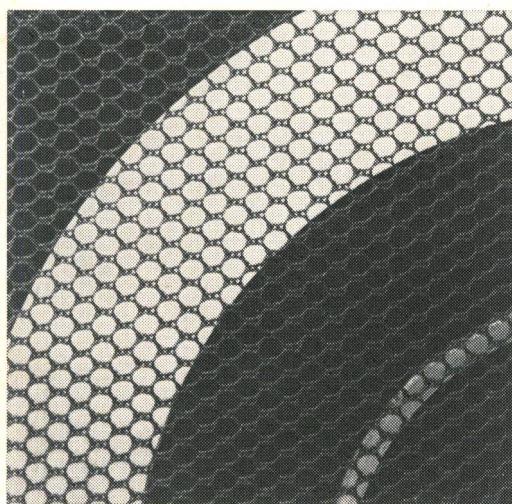


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Wharfedale E's look loud in their see-through fishnet



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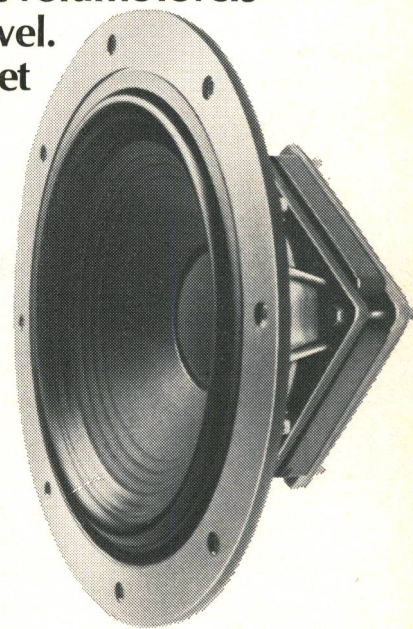
grilles. Which expose their brushed aluminium rings. And their controls. The controls accommodate the speakers to your accommodation.

If you'd like to hear them, drop us a line.

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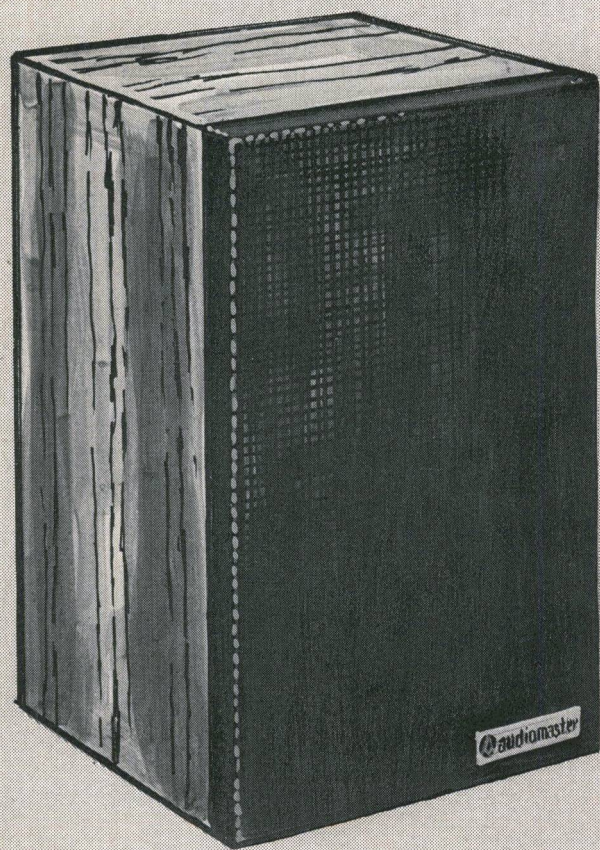
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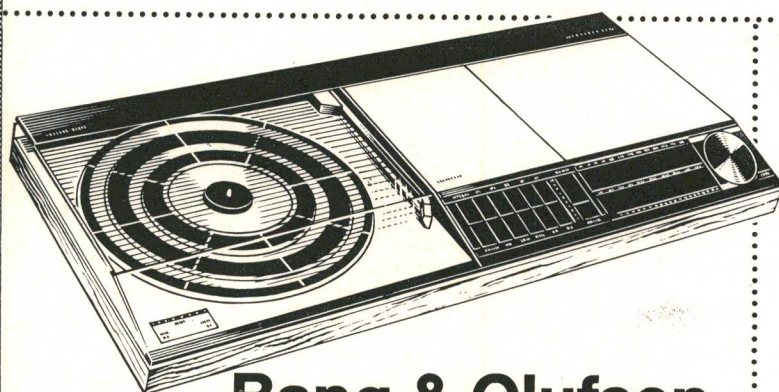
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Bang & Olufsen

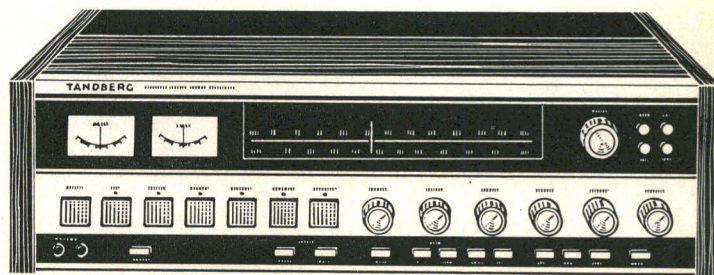
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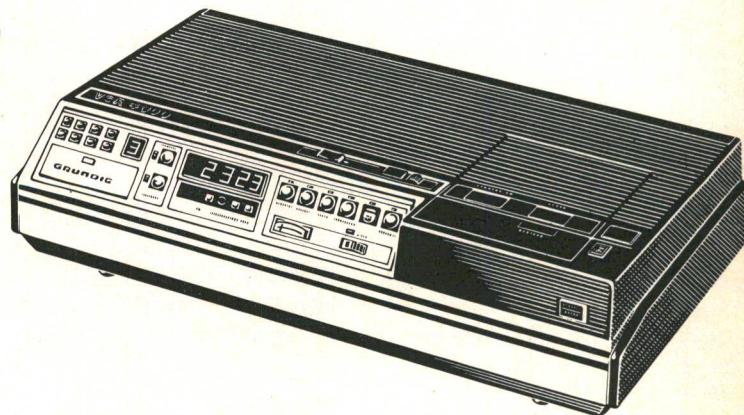


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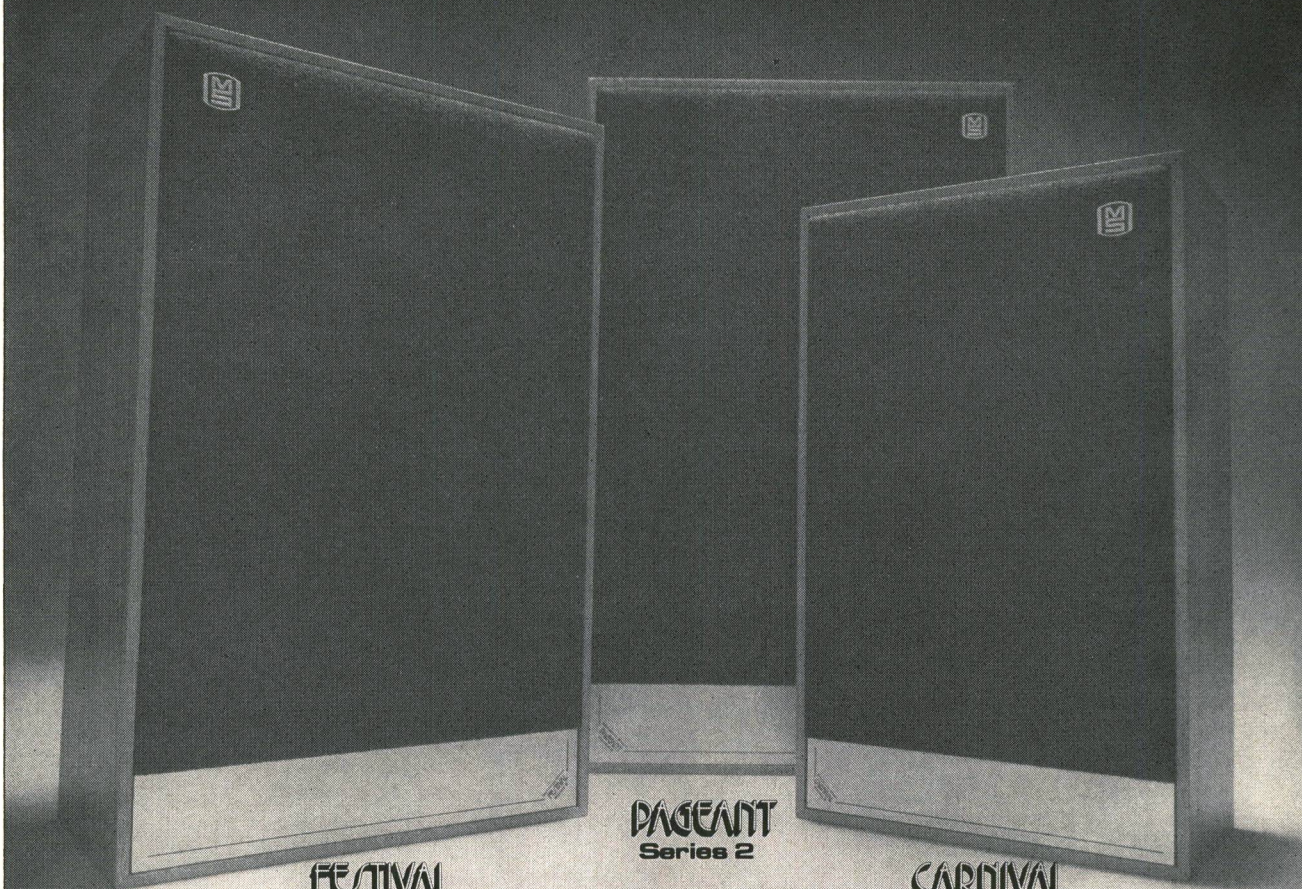
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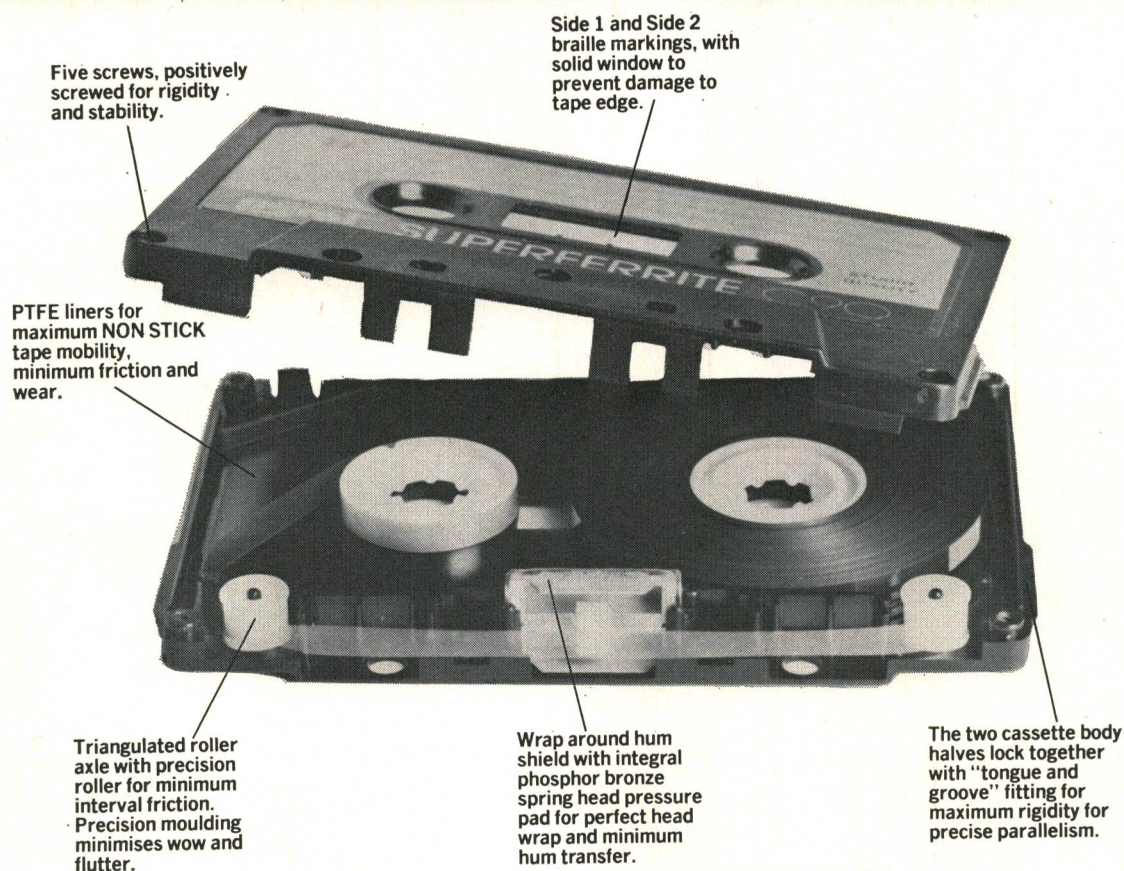
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(Tech Editor/Swedish Hi Fi & Musik Magazine. Extract from issue 3/78)

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The Rogers Export Monitor Loudspeaker — the pleasant openness, plus full clean treble would be appreciated on classical music especially — upper mid-range and treble regions seemed excellent (Practical Hi Fi & Audio August 1977).
They were bought after serious listening and comparison — not only do they fulfil every expectation I had of a loudspeaker but after having had a chance to get over my excitement, they now appear to be as near perfect as money up to around £500 or £600 can buy (C. Traverse, Woodside, London).

The Rogers Compact Monitor Loudspeaker — we are inclined to suggest that the Rogers Compact Monitor may be the best of the lot, all things considered (Audiogram U.S.A. Dec 1977).
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The Rogers LS3/5A Monitor Loudspeaker — with approximately 40 worldwide unbelievable reviews, what can we say! — This speaker is truly unique (Stereo-Opus USA). It's a delightful or scary little bugger, depending on whether you're an audio enthusiast or a speaker manufacturer (Audio Critic Magazine USA) — one of the world's greatest loudspeakers, regardless of cost (Audiogram, USA). The mid-range and high frequencies are as natural and uncoloured as we have ever heard from a dynamic speaker — the Rogers LS3/5A's should be at the top of your audition list. (The Complete Buyers Guide to Stereo/Hi-Fi Equipment U.S.A.) Above 60 Hz the Rogers Mini Monitors outperform the vast majority of systems costing upwards of \$500 per channel (Stereophile U.S.A.).

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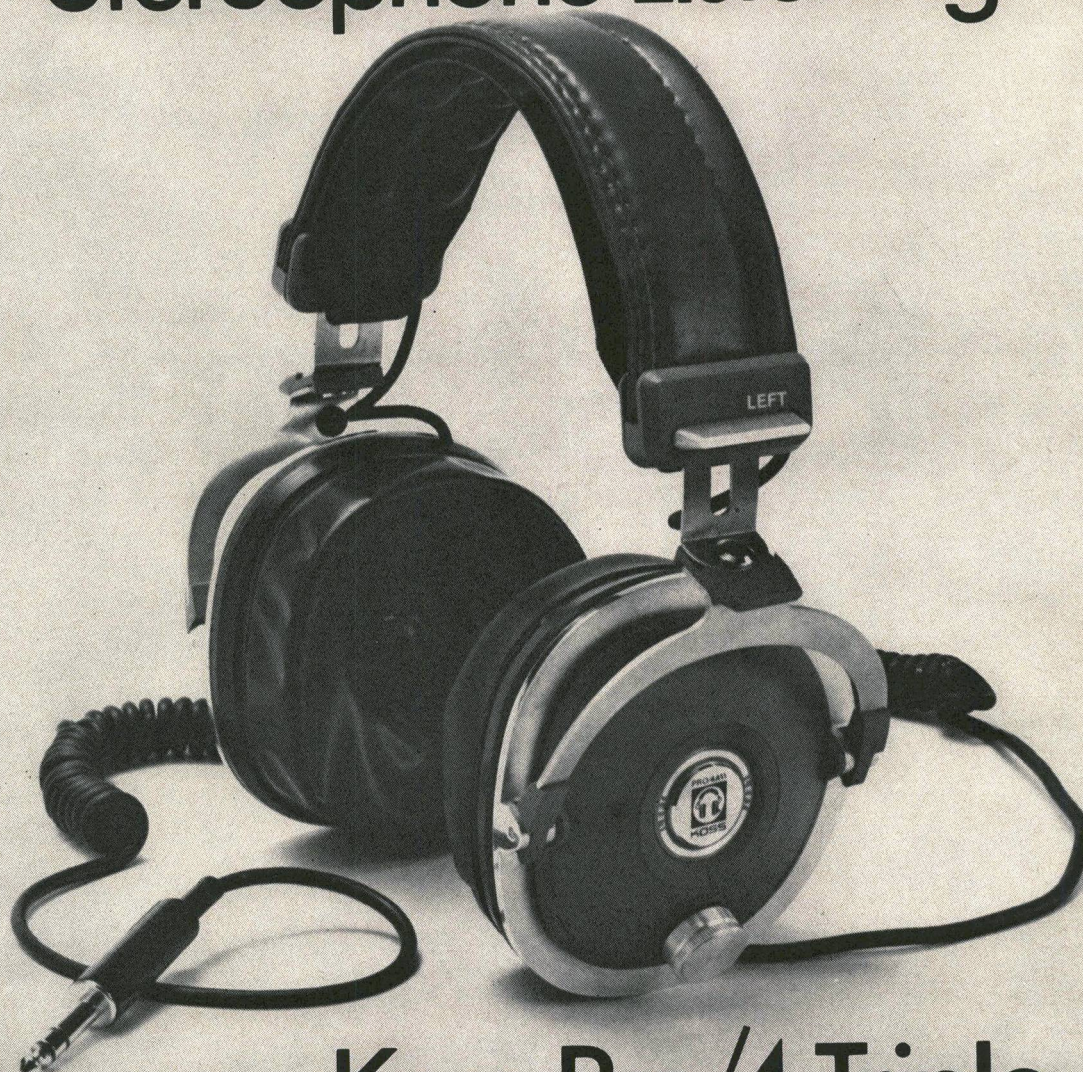


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full-bandwidth Sound of Koss that truly has to be heard to be believed.

But Koss engineers didn't stop their design innovations once they'd developed a superior element. Because stereophones have to be worn to be enjoyed. So through extensive studies on how stereophones are actually worn, Koss engineers were able to create a direct-contour Pneumalite® ear-cushion that not only offers soft plyable comfort but one that also provides a perfect seal for flat, low bass response to below audibility. And to add even more comfort to

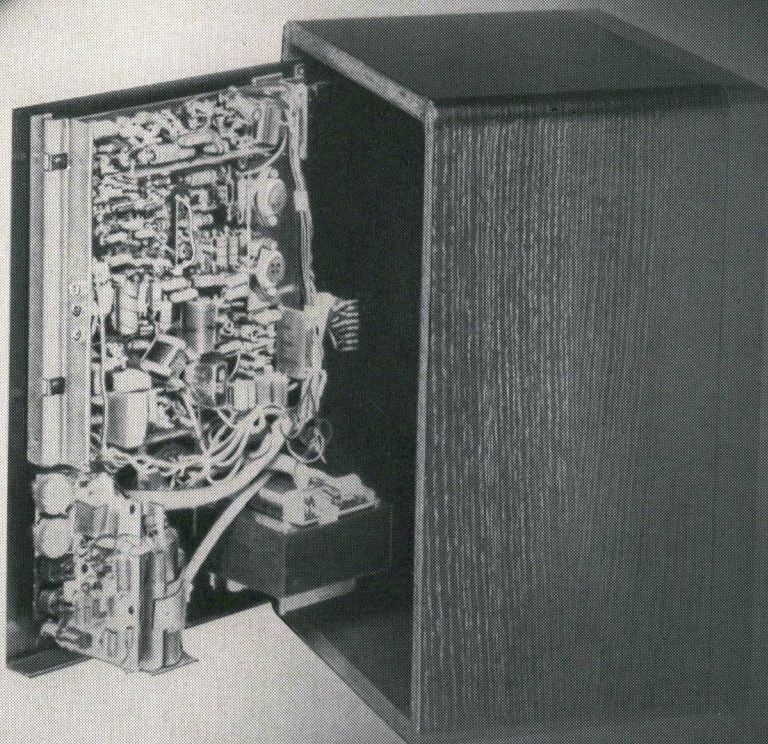
the new Koss Pro/4 Triple A Stereophone, they developed a special Pneumalite® dual headband that creates a feeling of almost weightlessness even over periods of extended listening.

Without question, the new Koss Pro/4 Triple A is the most accurately engineered dynamic stereophone ever developed. It represents the culmination of years of experience in the innovation and development of precision stereophone design and manufacture. Once you've heard it, we think you'll agree that it represents the ultimate in stereophone listening.

 **KOSS**® stereophones
...hearing is believing™

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SPEA



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SPEAKERS THAT SPEAK TO THEMSELVES: THE FIRST SIGN OF GENIUS.

There's a rational explanation why Philips Motional Feed Back speaker/amps speak to themselves.

By listening carefully to each note, MFBs are able to self-correct any annoying acoustic imperfections in a very clever way.

To produce enough power to accurately reproduce low notes, the cone of a speaker drive unit must move over quite a distance. The trouble is, towards the end of the movement it's opposed by stiffness from the cone suspension. This causes imperfections in the sound.

One way some manufacturers overcome this is to build speakers the size of cupboards.

The MFB approach is far more subtle.

On the centre of the woofer unit we have positioned a piezo-electric transducer that translates sound back into an electric signal.

It's then fed back by this tiny sensing device to a comparator located in an amplifier which checks the signal against the original input. Any corrections are then automatically made so that the notes that finally reach your ears are incredibly life-like.

Because of the MFB principle, high-fidelity and high power can be gained from remarkably compact speakers.

An important fringe benefit is that the self-correcting process also levels out the woofer-resonance 'hump' that causes over-emphasis of bass notes.

The amplifier section where the sound compensation takes place is actually contained within the speaker enclosure. This prevents outside interference from being picked up.

The addition of MFB speaker/amps to your existing hi-fi system means you can also boost output to 30, 60 or even 100-Watts per channel (depending on the MFB model).

If you're starting your hi-fi system from scratch, the MFB's built-in amplification saves you the cost of an amplifier.

Drop in on your Philips dealer and ask about our full range of MFB speaker/amps, turntables, cassette decks, open reel recorders, loudspeakers and tuner amps that all offer you more sound for your pounds.

You'll find with Philips, becoming an expert on hi-fi doesn't mean you have to become an expert on high-finance.



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HHN6

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PHILIPS

KBM

Dimensions: 762mm x 333mm x 340mm
 Weight: 18 kilos
 Height including stand: 39.25"
 Type: Tuned Port
 Drive Units: 10" Bextrene Bass
 2" Dome Mid-range
 1" Mylar Tweeter
 1/4" Mylar Super Tweeter
 Crossover: 10 Elements
 Crossover Points: 400Hz
 3,500Hz 9,000Hz

Nominal impedance: 8 Ohms
 Frequency range: 30-20,000Hz
 (± 2 dB 50-25,000Hz)
 Power Handling: 80 Watts Programme
 Sensitivity: 82dB for 1 Watt at 1KHz

Note: Designed and tested specifically using illustrated stand.



KRF

Dimensions: 610mm x 279mm x 317mm
 Weight: 15 kilos
 Type: Tuned Port
 Drive Units: 8" Bextrene Bass
 3" Plasticised Mid-range
 1" Soft Dome Tweeter
 Crossover: 9 Elements
 Crossover points: 550Hz
 3,000Hz
 Nominal impedance: 8 Ohms
 Frequency range: 45-20,000Hz
 (-3 dB 50-18,000Hz)
 Power Handling: 50 Watts
 Programme
 Sensitivity: Input 2.83 Volts:
 88dB SPL @ 1,000Hz, 1 metre
 on axis.

(Specification may be altered without prior notice)

KUB

Size: 11 1/2" H x 7" W x 8" Deep
 Type: Damped Tuned Port
 Drive Units: 5" Bass 3" Tweeter

Crossover: 2.5KHz 7 Element
 Nominal Impedance: 8 Ohms.
 Frequency Response: 40-18000 Hz ± 4 dB
 Power Handling: 40 Watts Programme
 Finishes:
 Teak, Olive, as standard. Colours, and
 Rosewood to special order.

Handbuilt by Craftsmen to Professional Standards

Making a speaker that will match up to the demanding requirements of the professional user is a feat in itself. Making a speaker that possesses the quality and finish expected by the most discerning listener is a skill possessed only by craftsmen.

Here at Keelsonic we combined the experts in Hi-fi development with skilled craftsmen to give a team of specialists devoted to producing the very finest loudspeakers.

The result is a range of speakers that is hard to fault from the very beautiful KBM Monitor to the unbeatable KUB - each one meeting a specific requirement.

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Keelsonic



Keelsonic Audio Developments Limited
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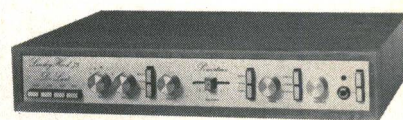
International PSI 4002 £247.50

200+200W Dual Channel Amplifier



This highly original design, published in Electronics Today International, capable of producing over 200W rms continuously from each of two totally independent channels, has such high linearity that distortion at full power is only 0.03% despite the use of only 14dB overall feedback. This together with a super high slewing rate makes the amplifier fit for the most demanding Super-Fi and professional applications.

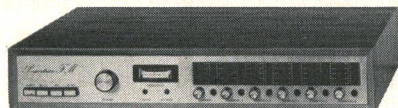
This easy to build version of our world-wide acclaimed 75W amplifier kit based upon circuit boards interconnected with gold plated contacts resulting in minimal wiring and construction is delightfully straightforward. The design was published in Hi-Fi News and Record Review and features include rumble filter, variable scratch filter, versatile tone controls and tape monitoring whilst distortion is less than 0.01%.



Linsley-Hood

De-Luxe 75+75W Amplifier £111.71

AMPLIFIERS (20-200W), CASSETTE DECK, TUNERS ETC., ETC., FULL DETAILS IN OUR FREE CATALOGUE - WRITE OR 'PHONE NOW!



Wireless World FM Tuner £78.97

A pre-aligned front-end module makes this Wireless World published design very simple to construct and adjust without instruments. Features include excellent a.m. rejection, push-button station selection as well as infinitely variable tuning and a phase locked loop stereo decoder incorporating active filters for 'birdy' suppression.



Linsley-Hood Cassette Deck £89.55

This design, published in Wireless World, although straightforward and 'relatively' low cost provides a very high standard of performance. There are separate record and replay amplifiers and switchable equalisation together with a choice of bias levels are also provided. The mechanism is the Goldring-Lenco CRV with electronic speed control.



T20+20 20W Amplifier £37.24

This kit, based upon a design published in Practical Wireless, uses a single printed circuit board and offers at very low cost ease of construction and all the normal facilities found on quality amplifiers. A 30 Watt version of this kit is also available for £43.20.

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Harbeth HLI	..	P.O.A.
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JR 149/Subwoofer	..	P.O.A.
Gale GS401 A	..	P.O.A.
Linn Isobarik DMS	..	P.O.A.
Mission (Full Range)	..	P.O.A.
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Mordaunt Short	..	P.O.A.
Monitor Audio	..	P.O.A.
Nightingale NMI	..	£385.00
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Tangent (Full Range)	..	P.O.A.
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AMPLIFIERS

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Radford (Full Range)	..	P.O.A.
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Trio KA1500	..	£69.50

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SIRAC pwr. amp.	..	P.O.A.
T.V.A. pwr. amp.	..	P.O.A.

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LUX T88V	..	P.O.A.
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Sugden T48/R51	..	P.O.A.
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Aiwa AX7600	..	£229.50
Marantz 2226	..	£169.90
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Grace G707	..	P.O.A.
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SME 3009 II F/H	..	£44.00
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SME 3009 III	..	£99.00

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AKG (Full Range)	..	P.O.A.
Coral 777EX	..	m/c £51.50
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FR I Mk II	..	m/c £57.50
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The JR149 runs rings round conventional box speakers



Here's why:

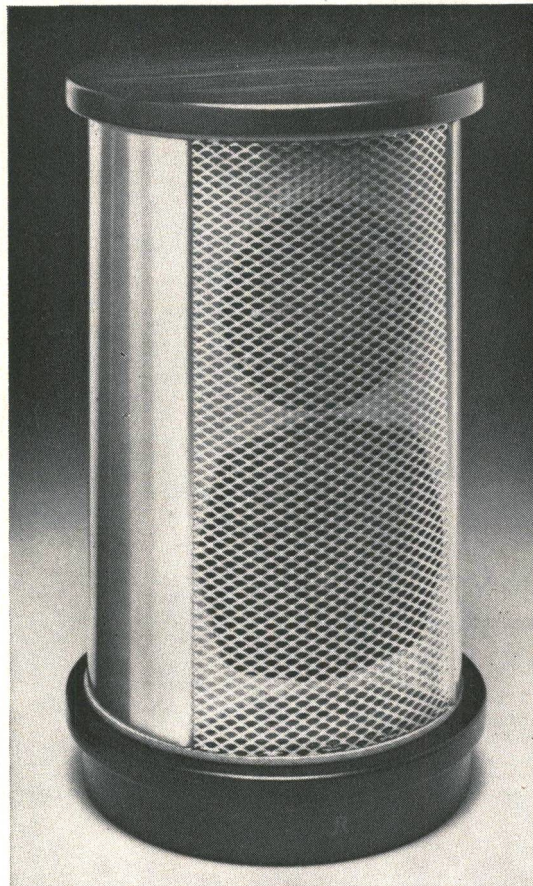
The round design of the JR149 not only enhances the speaker's appearance but actively aids the sound quality. Rectangular speaker enclosures with their flat panels pose many problems to the designer and listener. The resonances of box cabinets make themselves heard in colouration of the sound despite the introduction of various damping methods and the use of internal partitions. The JR approach departs radically from conventional cabinet design to provide a combination of small size and high performance.

The smooth external contour of the cylinder allows high frequency response to be unaffected by edge reflections. Polar response also is improved: wide dispersion of output gives a more consistent and realistic stereo image, and for the user this brings an important advantage — more freedom of choice of listening positions in which good stereo can be enjoyed.

Music and speech reproduction of all kinds, including organ music, are of a quality to belie this speaker's small size. In fact with the JR149 the listener is less conscious of the source, much more aware of the realism with which musical sounds are projected in the room.

Due to the accurate matching of all parameters, no undesirable phase effects are exhibited and pink noise tests have revealed a truly remarkable lack of colouration. For sheer fidelity and performance these new speakers attain new standards. Impeccable design and specification have achieved a breakthrough in audio technology.

Designed by hi-fi pioneer Jim Rogers, the JR149 has the benefit of the designer's extensive experience in audio research and

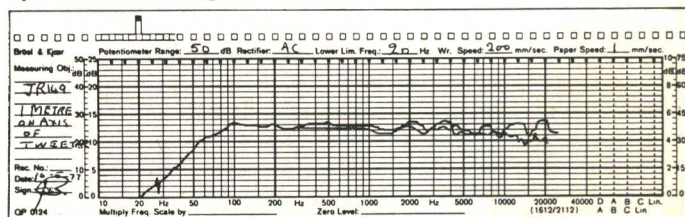


JR149 with Declon foam removed

development which has embraced high fidelity equipment in its various forms. Model 149 is manufactured under scientifically controlled conditions backed by test and measuring facilities of the most modern type, and is subject to all the care in manufacture and assembly, technical checking and quality control warranted by a speaker of top hi-fi calibre.

The B&K frequency response trace of the JR149, showing on-axis and off-axis response at high frequencies, demonstrates the smooth performance of this novel high-grade design. Important though technical measurements prove to be, however, only careful listening can reveal the merits of a good loudspeaker. Audition of the JR149 provides a fresh and exhilarating experience — a view of musical values and stereo quality which reflects

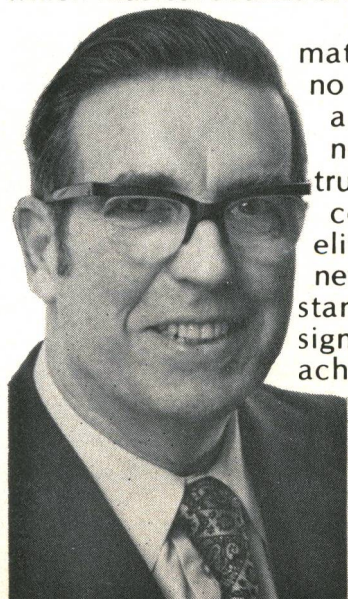
the flair and technical resource underlying the speaker's design.



Bruel & Kjoer response curves

Top and base finishes are available in teak, walnut, rosewood, yew and aluminium, as well as red, green or brown leather inlaid into rosewood. Black acrylic or white acrylic are optional extras. The cylinder is covered in black Declon foam. A wall bracket system is available as an accessory.

JR Loudspeakers



Designer Jim Rogers

Please send me full colour leaflet and test reviews on JR149 Loudspeakers.
Post to: JR Loudspeakers, 114 Ashley Road, St. Albans, Herts. AL1 5JR.
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Complete with Marantz 4G Speakers
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Aiwa 5050
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Our price
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TUNER AMPLIFIERS



Our price
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Sony STR 2800L

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Our price
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Compact FM/AM 15W per channel stereo receiver with FM stereo, beacon & mute switch, loudness boost & tape monitor.

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Our Price
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Magnificent auto-return direct drive turntable giving a W & F of only 0.05%. S/N ratio 70 dB and fitted with statically balanced tonearm. Complete with Ortofon F15E Cartridge worth £18.45



Our Price
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Sony PS11

Direct drive semi-automatic turntable equipped with illuminated stroboscope, damped cueing lever, extremely low W and F. Cartridge included.

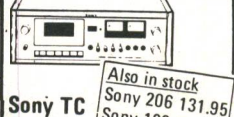
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Our price
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New stereo Dolby cassette deck with electronic muting, normal/Ch/0.2/FeCh tape facility, full auto stop, W+F of 0.18% max.



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Sony TC 204
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60p	60p
80p	80p
110p	110p
125p	125p
150p	150p
180p	180p
210p	210p
240p	240p
270p	270p
300p	300p
330p	330p
360p	360p
390p	390p
420p	420p
450p	450p
480p	480p
510p	510p
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THE LINK HOUSE GROUP

TWO straws in the audio wind were wafted our way the other day, both concerning the influence of recording on attitudes to music. The first floated across the dinner table from John Gilbert (well known to readers of that *other* record journal) following an exhaustive day's listening at the Quad amplifier tests described on page 73. While visiting a German hi-fi show, John heard some familiar but distressing sounds derived from a British recording which he knew well. Noting the type of equipment being demonstrated, which should hardly have made the bass boom or the treble scream, he looked closer and discovered that the tone controls were tilted to give maximum boost. Feeling somewhat dismayed, J. G. protested that the exhibitors were offering a travesty of the real sound, but was met with a declaration that: 'this is hi-fi, not real music—it's the type of sound that the German public wants.'

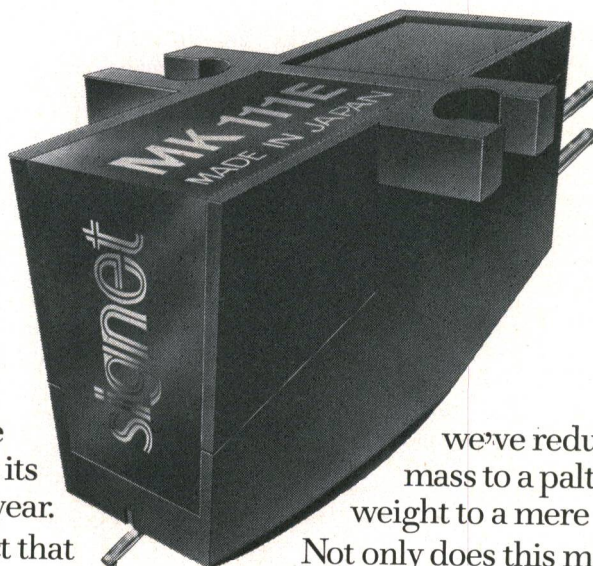
This would be a sad comment on the taste of any people, but it jars particularly when applied to the land of Bach, Beethoven and Wagner. It used to be said that the British were an unmusical people, but this story joins similar tales from elsewhere to confirm our feelings of relief that the world's record industry has put down its deepest roots in Europe's off-shore island, where there is still a fair chance that recordings will be judged in terms of natural sound.

By a happy coincidence, we chanced to hear of a minor but striking event in that island's musical life just as Mr. Gilbert finished relating his tale of boosted extremities. A familiar voice further up the table was talking about the vicissitudes of playing in an amateur orchestra. It was Peter Walker (of Quad) who plays the flute very competently as well as making amplifiers and loudspeakers. At an orchestral rehearsal of a Rachmaninov piece Peter made his flute entry *pianissimo*, as marked in the score, to which the conductor objected, telling him to play *mezzo-forte*. P. W. respectfully referred his maestro to the composer's intentions, but was told to make it *mf* 'because people are used to hearing detail that way on records'. What happened at the subsequent performance seems a little uncertain, but there was no doubt in the mind of a renowned manufacturer of hi-fi hardware that the practices adopted by the makers of hi-fi software should not be allowed to influence the way music is performed before a live audience.

Was this symptomatic? Does our reliance on recorded music have an all-pervading influence, not only on what listeners regard as 'normal' but also on what conductors aim to let their audiences hear in the concert hall? And even if composers might have thought differently had they known that their music would most commonly be heard coming from loudspeakers in a room, not from musicians in a hall, does this in any way justify altering the balance of *live* music?

The arguments for tampering with balance and dynamics when making a recording are legion, and would perhaps only evaporate completely if and when reproduced music encompassed the whole experience with complete aural and visual realism, so that one was virtually *at* the performance. But even then it would have to be a live event, actually taking place as one watched and listened, so that all the psychological tensions of real music-making would apply. Otherwise the recording producer's demand for repeatability would again arise, with all that this can mean in terms of adjustments and re-takes to achieve an academic 'perfection' which, as Peter Turner so wisely admits on page 105, can never really replace the magic and mystery of a great artist's interpretation heard as it actually pours out of his lips and fingers.

It doesn't just play up to the patenting laws.



It's hard to believe it, but the moving coil principle celebrates its 80th (yes 80th) anniversary this year.

Equally surprising is the fact that the moving coil cartridge first tracked the black plastic back in 1945.

Why then, you may ask, has it taken so long for the moving coil to get moving?

The answer is patently, patents.

Indeed, over the years, a whole hotch-potch of patents have run (one still does) and this has tended to limit development.

Thankfully, times change.

And as we're about to prove with our Signet MK III E Dual Moving Coil cartridge, it's not only times that change, but designs.

You see, the MK III E is based on Signet's unique dual generating element system.

So, instead of having just one coil through which all the information must pass, the MK III E has coils for both left and right channels. (In effect, an exact reversal of the original record cutting head.)

And because we use beryllium for the cantilever and a 0.2x0.7mil stylus tip (ground from a diamond rod some 0.009mm square),

we've reduced the moving mass to a paltry 0.2mg and the total weight to a mere 4.8gm.

Not only does this make the MK III E lighter than any other moving coil cartridge, it also gives you a far wider choice of arms to track it in.

Given more space, we could give you more details.

(Like frequency response of 15Hz-50KHz. Output rating of 0.4mV. at 5cm/sec. And compliance of 40×10^{-6} cm/dyne.)

However, suffice to say that in some ways we're indebted to the patenting laws.

Because if it weren't for them, everyone else would be making the Dual Moving Coil cartridge.

And not just Signet.

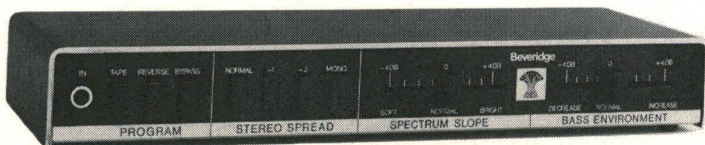


You'll hear more from us.

Shiro (UK) Ltd., Shiro House, The Ridgeway, Iver, Bucks. SL09JL

The Spring Collection Part 2

Continuing our necessarily cursory perusal of products released or about to be released on to the market this spring. This month we look at a few accessories and mods as well as some 'heavier' goodies



Hot Beveridge

New from California is the Beveridge Control Module CM-1. Inserted between the pre and power amp or via tape monitor connections, the module is able to provide a useful degree of tonal compensation through its 'Spectrum Slope' (operating around a 1 kHz pivot) and 'Bass Environment' (± 4 dB at 40 Hz) controls, as well as enabling a reduction of image width from stereo to mono in four (overall) stages.

A Tape button restores the usual tape monitor functions in cases where the unit has borrowed those connections—i.e. when used with some integrated amps, a Reverse button switches the channels around, and a Bypass (cancel) option defeats the whole device to provide a reference. THD and IMD are both quoted as 0.002% and the frequency range is 10 Hz–30 kHz ± 0.25 dB. Dimensions are 12x5x2 in. and the price is \$300. Harold Beveridge Inc., 422 North Milpar Street, Santa Barbara, California 93103.

Nytech developments

Nytech appear to be well on the way to honouring the promise to 'cater for the less well-heeled' audiophile that they made when announcing their re-organization at the end of last year. Production to date has concentrated on the 'calculator style' CTA 252XD model, which contains their latest power supply and output circuitry, together with an option of moving-coil cartridge input. The standard CTA 252 has now been dropped as it could only be produced at a marginally lower price and is considered to offer significantly less performance. The XD now costs £202.50, while standard 252s can be converted for £50.63.

Two new products have now been announced. The first of these is the CPA 602 power amp, which offers a conservative 60wpc/4 and 40wpc/8 and has a transient capability of 200 Va. Sound quality is claimed to exceed nearly all other available amps regardless of cost, and at an inclusive price of £135 it may prove to be one of the cheapest super-amps around. Designed to operate with the 602, and incor-

porating interconnections to switch two pairs of speakers, is a tuner/pre-amp derived from the 252XD, which costs £157.50. The removal of power amp stages and use of a specially designed power supply has reduced hum and noise, particularly on the m-c input, to near the theoretical minimum. It is expected that separate tuners and active crossover units will be available later this year, but these plans are not yet finalised.

Dusseldorf Hi-Fi 78

The Dusseldorf show is now set fair to become a regular biennial event, and is rapidly becoming one of the most important European hi-fi shows. Sponsored by the highly active Deutsches High Fidelity Institut, under energetic Chairman Karl Breh, an impressive roster of 144 exhibitors, plus 27 from Great Britain, had already been established six months before the event; in fact the only obvious omissions are the large domestic manufacturers with widespread electronics interests outside the hi-fi field, and they are confidently expected to be there on the day! The show is

restricted to products meeting the minimum DIN 45.500 specifications, plus relevant accessories, furniture, and literature, and will include considerable musical activity in the form of workshops, and broadcasts in association with the local radio network. Unfortunately for interested Britishers, the show clashes heavily with Harrogate, taking place between Aug 18 and Aug 24. Entry is quite expensive at £2 per day and £6 per season ticket, but this includes the musical events. Further details can be obtained from UK representative John Naylor, International Trade Fair Agencies Ltd., 10 Old Bond Street, London W1X 3DB, 01-409 0956.

Braithwaite Amps

Following on in the footsteps of the successful RA14 Head Amplifier, the new RA17 offers the same level of performance with the convenience of battery power and the advantage of a reduced price £49.95 inc. Similarly styled in black tubular form, the unit has fixed input characteristics

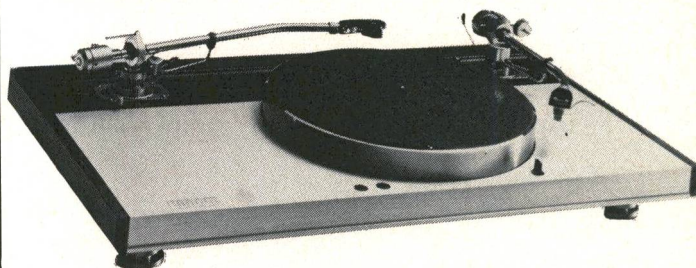
which are designed to meet the requirements of the majority of moving coil cartridges.

Also shown at High Fidelity 78 was the prototype of a 70 watt Class-A power amplifier which comes in the form of two rack-mounted mono units. A matching pre amp is expected to appear later in the year.

Blow it

The well-known Audio Packs division of Tape Recorder Spares Ltd have now come up with a versatile range of eight 5x20 mm fuse kits which should prove a boon to retailers. Four of the kits will comprise Quick Blow and four the Anti-Surge type and each kit will contain 250 fuses of five different ratings. The range overall will cover values from 100 mA to 6.3 A.

The kits are supplied in convenient flip-top plastic dispensers and refill packs are readily available. From Tape Recorder Spares Ltd, 206-210 Ilderton Road, London SE15 1NS (01-639 7844).



Heavily Armed

The new PD444 turntable from Lux has been designed expressly to cater for two pickup arms and should prove valuable to both showroom exhibitors and to those fanatics who prefer to use different arms/cartridges according to whether they are listening to the spoken word or music.

Direct driven and quartz crystal governed, the unit has been designed to be essentially free of acoustic feedback problems. The chassis is an iron and particle-

board sandwich, supported on complex silicone grease-damped neoprene rubber/spring-loaded feet and weighing in all some 22 kg. The platter alone weighs 2.5 kg but the bearing is only required to support about one-fifth of this, the main load being undertaken by a system of magnetic levitation. Various adaptors are available for arm-mounting and the outputs may be taken either directly to the amplifier(s) or switched by controls on the plinth. Recommended retail price is £478.12 inc. VAT.

4 Good Listeners

**RE-238
HIGH VELOCITY**



Professional performance from ultra-thin, specially curved diaphragms allied to powerful magnets. Padded headband with specially designed yokes that hold the slim, nylon padded earcups firmly but comfortably against any headshape. Open back. FR: 16-22,000 Hz. Sens: 100 dB. SPL at 1 mW. Matching Imp: 8 to 1000 Ohms. Weight: 160 gm.

Around
£13.00 inc.

**RE-248
ORTHODYNAMIC**



The new concept (until now featured in much more expensive headphones) that provides performance equal to Electrostatics and low linear distortion even at high sound levels. Leather grain headband and earmuffs. Open back. FR: 16-20,000 Hz. Sens: 90 dB. SPL at 1 mW. Imp: 8 Ohms. Weight: 240 gm.

Around
£14.50 inc.

**RE-258
RARE-EARTH
SUPERMAGNET**



Slim lightweights with outstanding performance from drive units employing the most powerful size-for-size magnets obtainable and specially curved diaphragms only 12.5 microns thick. Leather grain headband, nylon padded earcups on yokes that tailor to any headshape. Open back. FR: 16-25,000 Hz. Sens: 125 dB. SPL at 1 mW. Matching Imp: 8 to 1000 Ohms. Weight: 150 gm.

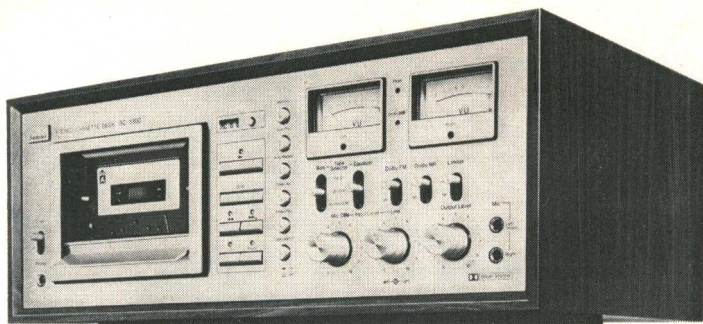
Around
£19.00 inc.

**RE-268
SLIMLITE**



Superlight—120 grams, superslim—only 10 mm thick, but fitted with advanced technology drive units that outperform bulkier, more expensive headphones. Padded, adjustable twin headband and supra aural earmuffs provide exceptionally comfortable listening. Open back. FR: 16-22,000 Hz. Sens: 100 dB. SPL at 1 mW. Matching Imp: 4 to 150 Ohms.

Around
£25.00 inc.

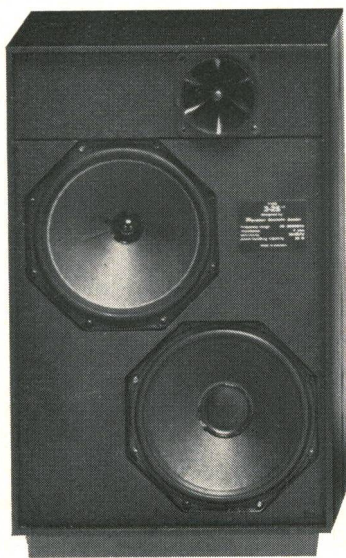


Sansui

New top of the range cassette deck from Sansui, the SC-5100 is claimed to outperform many of its rivals yet still remain highly competitive as regards price. The deck incorporates their 'Direct-O-Matic' format which offers the advantage of a readily accessible tape compartment to facilitate head cleaning and indeed general use, the cassette itself being front-loaded but not subjected to the usual cumbersome door and associated mechanisms.

Audio Pro

New equipment from Audio Pro Hi-Fi Ltd was introduced at High Fidelity 78. Swedish-made by 3D Gruppen, the range comprises three speakers, a receiver and a showroom/exhibition comparator.



The speakers all use high efficiency horn-loaded piezo-electric tweeters and balance these with cone drivers in a variety of configurations. Smallest of the enclosures is the 3-25 (3 units, 25 litres) using the tweeter with one 8 in. driver and an 8 in. ABR in a cabinet 325x523x230 mm. Its handling capacity is 35 watts RMS

The host of facilities includes integrated circuit logic to realise all the main functions upon command from the 'feather-touch' buttons, automatic wind-on of the first few turns of tape to eliminate those frustrating experiences when recordings somehow manage to begin on the leader, memory wind and fully automatic play/repeat functions. Frequency range is 20 Hz to 15 kHz for 'Normal', LH and to 17 kHz with Chrome. Price of the new deck had yet to be finalised at the time of writing, but is expected to be around £450.

with a sensitivity of 90 dB/W spl at 1 m. The 4-40 (318x670x318 mm) has two tweeters with two 8 in. drivers, a sensitivity of 98 dB/W at 1 m and can handle 70 watts RMS. This design is unusual in using an 'acoustic dipole system' (apparently the rear of the cabinet has two tuned ports) and is said to produce a particularly clean and open sound. The 5-40 includes a 5 in. mid-range unit in its (384x598x290 mm) 'IB' enclosure and is rated at 90 dB/W with 90 W RMS capability. Prices, £135, £206.18 and £209.56 respectively + VAT.

Little information was available at the time of writing about the new receiver, other than that it is built around a microprocessor chip, and seems destined to create a lot of interest. The comparator looks fun. It can switch between up to 99 turntables, tape decks, amplifiers and speakers (99 pairs). Talk about A/B comparisons! Audio Pro are now distributing the American Allison speakers and were showing them at the Cunard. It is particularly interesting to have a UK outlet for this range—Roy Allison used to be chief designer at Acoustic Research.

All these statistics are, of course, considerably less interesting than those of Miss World who made an appearance at the Audio Pro stand to launch the new range. Audio Pro Ltd, Sandy Lane, Moston Road, Sandbach, Cheshire.

The Miller Effect

A recent legal decision from the EEC Court of Justice seems guaranteed to strike terror into some hearts in the audio industry. The German firm Miller Schallplatten GmbH was appealing against a European commission fine of DM256200 (around £65,000). The heinous crime which Miller had committed was to contravene Article 85 of the Treaty of Rome (which, as we are now in the Common Market, governs us) by trying to restrict the competition unfairly. Miller produce gramophone records and musicassettes which are sold mainly on the German market. Miller agreed to supply a Strasbourg firm on the condition they did not re-export the discs or cassettes into other countries. The reason for this was very simple. Miller were exporting at much lower prices than those being charged to the wholesale trade in Germany and a firm in Strasbourg could thus have made money by exporting what they bought from Miller back into Germany. This is exactly the kind of restriction which other firms in the audio industry are relying on to preserve a pricing structure. But Article 85 of the Treaty says this

is unfair and this is why the European Commission fined Miller heavily. On appeal, Miller argued that as they hold only a small part of the record and tape market, their actions could not have any appreciable effect on trade between Common Market countries and so should be allowable. They also argued that their policy was endorsed by the firms with which they dealt. To cut a long legal story short, however, the European Court found in favour of the Commission and against Miller. It didn't matter, they said, that all parties to the restricted licence were happy with its terms—all that mattered was that the licence was restrictive. The court also held that it was sufficient for Miller's action to be 'capable of affecting trade between the member states' and that there was 'a real danger' of trade being affected. So Miller have been ordered to pay not only the original fine but also costs of the appeal. Any British hi-fi firm or record company enforcing similar licensing agreements would be well advised to reconsider them—or risk a heavy fine when, as sure as night follows day, big brother in Brussels finds out.

Adrian Hope

Bolivar Test Record

When we first heard Bolivar speakers last year, there was talk of a test record featuring the Bolivar Blues Band, made up of Bolivar employees. Well, that record has now appeared and will be available free to Bolivar owners when they send proof of purchase to the importers, Harman UK. It is also available for £2.99 from dealers, and is worth checking out as it is very easy to use, being aimed at the less technical buyer who has probably been put off by other test records. In addition to speaker identification, phase and placement (using bass guitar and bass drum) bands and cartridge tracking (with 4 levels of triangle), bias setting and silent bands, there is a stunning synthesiser and drums track to give your whole system a workout. Incidentally it revolves at 45 rpm, so tough luck Linn Sondek owners, you'll have to borrow a deck, as we did.

Altec Lansing

Altec Lansing have announced new versions of their range of bookshelf speakers. A new voice coil and magnet system was devised to optimise the performance of the 'Model One', which is a two unit system using an 8 in. long-throw bass driver and 4 in. tweeter

in a totally sealed enclosure. The other units have retained their individual model numbers, Three, Five, Seven and Nine, but have been re-named Series II. Without altering the basic designs, Altec have made some production improvements to help maintain reliability and guarantee repeatability. Die-cast and injection-moulded frames on the drivers and moulded one-piece port tubes are now used and this again is partly for reasons of spec. consistency. Prices £97, £113, £156, £198, £259 respectively each plus VAT.

All Change

Badger Sound Services Ltd, the DIY speaker people, have moved premises and now operate from 46 Wood Street, Lytham St Annes, Lancashire FY8 1QG.

Son Audax have also moved. Their new address is Plot 18, Woodside Avenue, Eastleigh, Southampton (0703 611444).

Spendor BCI mod

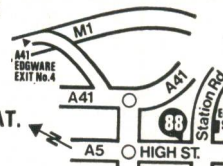
A small modification has been incorporated in current production of the BC1, and this is claimed to tighten up and reduce coloration in the bass. It involves the fitting of a small ring of specific acoustic foam inside the port opening, which adds a measure of acoustic resistance and reduces

PLANET

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DEMONSTRATIONS, EXPERT GUIDANCE AND AFTER-SALES SERVICE

Audio Patents Adrian Hope

STRATHEARN Audio have a number of patent applications of their own in the pipeline to acceptance and publication. One, BP 1 498 793, has now been published. It proves to be a fairly lengthy document dating back to late 1973 and 1974, when Strathearn were still thinking in terms of breaking new ground with exciting high technology. The patent covers a series of opto-logic devices to detect the presence of a disc record on a gramophone turntable and control the functions of the gramophone accordingly. The Bang and Olufsen parallel tracker turntables of course already incorporate opto-logic control, but the PATS—Strathearn intention was to adopt a different approach. The patent in fact describes such a widely varying set of approaches and has such broad claims to novelty that it could well provoke legal reactions from B & O.

In one arrangement described by Strathearn the turntable platter has rings or spirals of perforations with a light source and a light sensor underneath. The sensor and source are angled so that light from the source is reflected by the underside of the platter onto the sensor. The platter perforations move through the reflection path when the platter is rotating. Thus when no disc is present, the light sensor receives a reflected beam of light that is chopped by the inevitably non-

reflecting perforations. When a disc is present, its surface covers the perforations and provides sufficient reflection to generate an essentially smooth reflected beam. Alternatively, the lower side of the platter is made non-reflective so that when it carries a disc the sensor receives occasional bursts of light reflected from the disc through the perforations. In other designs the beam of light passes through the perforations in the platter to be sensed by a sensor on the other side.

By arranging the platter perforations in a series of concentric rings, or in a spiral pattern, and locating sensors across the platter diameter, logic circuitry can evaluate not only the presence or absence of a disc on the platter, but also its size (i.e. 7, 10 or 12 in.). All manner of variations on these basic themes are suggested. The perforation through the platter can, for instance, be provided with prisms or optical fibres to bend the light path from a light source alongside rather than directly above or below the platter. It is also suggested that a fantail of light could be skimmed across the top of the platter onto an elongated sensor, the fantail being obstructed by a disc on the platter so that the wider the beam reaching the sensor, the smaller the diameter of the disc on the platter.

A new British Patent Act is coming into force to replace the old 1949 Act, but suffice it here to mention those aspects of the Act which are of immediate relevance to the audio fraternity. Essentially the new act brings Britain into line with the rest of Europe for instance, British patents will last 20 rather than 16 years. For the first time in England the London Patent Office examiners will be able to refuse an application if they think it covers only a trivial advance over what has been previously patented. For the past 350 years or so it has usually been sufficient for an inventor merely to argue that no one has patented *exactly* the same thing before. An examiner has sometimes had to accept a patent application for a gadget even though in his lunch hour he has been able to find something quite similar on sale at Woolworths across the road from the London Patent Office. There has thus been a continual stream of trivial audio inventions, often relating to loudspeaker driver and cabinet design and really nothing more than ill-informed rehearsals of previously well-known ideas. This stream will now dry up, to the benefit of almost everyone concerned. Even inventors will benefit, as they will no longer be tempted to waste time and money securing patents that aren't legally worth any more than the paper on which they are printed.

turbulence in the port. A number of enthusiast-mods have been suggested to improve the bass of the BC1, but this is the first to receive factory sanction, and is the result of carrying out listening tests on a number of different possibilities. Owners will be pleased to know that the mod can be 'retro-fitted' by end-user, and the correct foam strips can be obtained f.o.c. by enclosing an s.a.e. from Spendor Audio Systems, Unit 12A, Station Road Industrial Estate, Hailsham, Sussex.

Koss 'phones

Clearly designed for long periods of continuous use, the new Koss Pro 4 Triple A headphones feature specially developed 'Pneumatic' earcushions and 'dual suspension' headband. The new cushions are particularly soft and pliable, enabling a good acoustic seal to be achieved with the minimum of lateral pressure. This seal combines with the large radiating surfaces ($2\frac{1}{2}$ sq ins) of the dynamic elements to produce a useful frequency range of 10 Hz-20 kHz. Nominal impedance at 1 kHz is 220 ohms and the sensitivity is 0.7 V for 100 dB spl (sine wave at 1 kHz). RRP is £42.75+VAT.

Signet M.C.

The Signet division of Audio Technica launched a new moving coil cartridge in April. Compliance of the Signet Mk III E is quoted as 40×10^{-6} cm/dyne, and the mass of the moving assembly has been minimised by utilizing a beryllium cantilever together with a stylus hewn from a 'grain orientated' diamond rod of minute dimensions. The two coils are mounted at the cantilever pivot and aligned so as to ensure a particularly high order of information retrieval accuracy. Cartridge weight is exceptionally low at 4.8 g, but the price isn't at around £112. Initial supplies will be very limited as a result of the demand in Japan and USA.

Sound '78

An impressive cross-section of amplifiers, microphones, automatic announcement devices, alarm systems, discotheque equipment, intercom, and paging equipment, mixers and recording equipment, was displayed in mid-March at the Association of Sound and Communication Engineers' exhibition in the Cunard Hotel, London.

More than 30 companies took part in this exhibition, including

familiar names like AKG, F.W.O. Bauch, Eagle, CTH, Rola Celestion, Electro-Voice, Shure, and the Keith Monks' Group of companies. Among the many items of interest to the audiophile, space will allow us to mention only the Shure M615AS-2E Equalisation-Analyser System, and the new Calrec Soundfield Microphone.

The M615AS-2E has two main functions—it is a source of equal-energy per octave random noise (pink noise), available at microphone and auxiliary levels to serve as a test signal source, and, secondly, it accepts the output of the Shure ES615 Analyser Microphone, or other microphone, to indicate the relative energy in each of 10 octave bands.

Briefly, the new Calrec microphone offers unprecedented operational flexibility and accuracy of stereo recording. Four outputs are generated, proportional respectively to the sound-field pressure and to the three components of pressure-gradient. These are left minus right, front minus back, and up minus down. From this B-format, any first-order microphone characteristic can be synthesised. That is, any mixture of omni, cardioid, hypercardioid, or figure-of-eight. This notable development in sound trans-

ducers obviously has applications in 'surround sound' systems, such as Ambisonics.

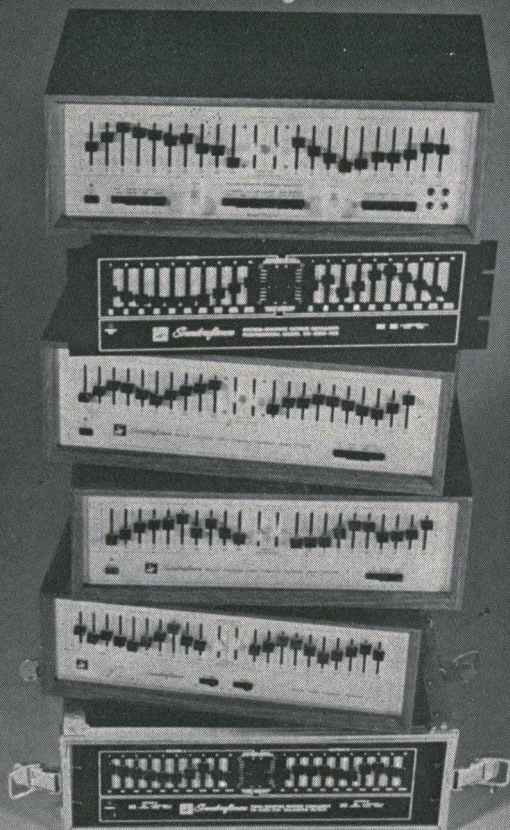
The ASCE Council is at present discussing the Association's role, composition and future status, from academic and commercial status standpoints, so that Roger Driscoll's stimulating lecture on 'Education and the Engineer' on the opening day had special relevance to the growth of this organisation. Details of membership from ASCE, Ltd. 47 Windsor Road, Slough, SL1 2EE.

Crossword Winners

R. E. Green, Hornchurch, Essex
W. K. Chalmers, Surbiton, Surrey
M. Williams, Guildford, Surrey
C. M. Tatham, Chesham, Bucks
A. H. Baker, Bushey, Herts

B	R	A	H	M	S	D	S	T	
O	U	Y				E	N	C	O
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			G	E	N	E	R	A	T
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L	O						L	E	A
M	A	G	N	E	T		S	H	A
W	E	H					S	H	A

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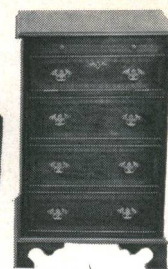
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Hi-Fi Cabinets

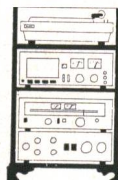


704 Cabinet for music centres or separates. Designed from A1800 period sofa table.

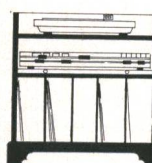
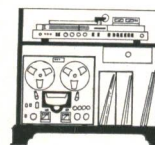


701 Cabinet for separates. Designed from a A.1750 period chest.

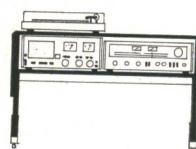
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Can You Hear Any Difference?

The Quad amplifier listening test challenge described by Adrian Hope



Trying hard to hear a difference (L to R top, then bottom): Laurie Fincham (KEF), John Crabbe (HFN/RR), David Stripp (BBC), John Borwick (The Gramophone), Jim Rogers (JR Loudspeakers), Mike Ballance (Popular Hi-Fi).

IN March of this year Peter Walker of the Acoustical Manufacturing Co. Ltd, makers of Quad audio equipment, put around £5,000 where his mouth is. James Moir and Associates were engaged to organise a panel test which sought to establish what, if any, differences exist in amplifiers designed both before and after the discovery of TID, between the sound of valve and transistor models, of capacitor and DC-coupled output stages, of separate and combined and regulated and unregulated power supplies, of transformer and transformerless outputs, of Class-A and Class-B operation, and of sharp cut-off at 20 Hz and flat response to near DC. In other words, the test was intended to show up any differences between the old and the new. Mr. Walker made it abundantly clear that he expected no differences to be audible, but was prepared to spend £5,000 to be proved wrong. As such he must surely rate as the most open-minded audio reactionary around today.

The background and events leading up to and surrounding the tests are at least as interesting as the test results. Deliberately, this article was written before the results were available. They will be added only as a footnote and will not alter the main text.

First let's look at the background to Quad, then the background to the dispute which led to the Quad tests. Acoustical launched the Quad II power amplifier in November 1953 and production continued until November 1967. Eighty thousand Quad IIs were made, that is to say forty thousand stereo pairs, of which half were

sold here and half abroad. With the advent of transistors it became fashionable for amplifier manufacturers to abandon valves, and by sticking with valves Acoustical were accused of stick-in-the-mud tactics. 'Move with the times', they were repeatedly told. In November 1967 they finally moved with the times, ceased all production of the Quad II valve models and launched the 303 transistor amp. This represented not only a shift from valves to transistors, but a move from Class-A operation to Class A/B, the abandonment of transformer coupled output, the abandonment of separate power supplies for left and right channels and the adoption of regulated power supply. In 1975 Acoustical launched the 405, which replaced the transistor triplet A/B output stage of the 303 with the entirely new current-dumping approach. The three Quad amplifiers therefore provide a fair condensation of audio trends over twenty-five years.

It has always been Acoustical's design philosophy to aim for an amplifier that does not degrade the program, and acts as nothing more than a 'straight wire' with sufficient gain built in to boost the low-level signals from an audio source to the high-level signals needed to drive a loudspeaker. In accordance with this philosophy, Acoustical have claimed that the Quad II, 303 and 405 differ discernibly only in power output. This contention thus flies directly in the face of an increasing conviction on the part of some reviewers and audio enthusiasts that there are inherent advantages and disadvantages in various of the design characteristics embodied in the Quad range.

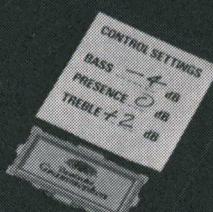
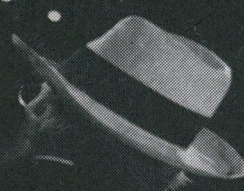
First and foremost, it has become widely held and argued that there are very real advantages in valves over transistors. Indeed, so widely held is this belief that Quad valve amplifiers now fetch outrageous prices on the second-hand market and there is a move by some amplifier designers back to valves in preference to transistors. Much ill-informed and arrogant nonsense has been written on the subject, and the valve bandwagon is now overburdened with camp-followers. There will very soon be a large quantity of very poor quality rubbish on the market which sells, at least temporarily, simply because it boasts bottle power. But there is seldom smoke without fire, and not everyone who has suggested that valves have something to offer over transistors is an ignorant camp-follower. Far from it. There is a growing number of well informed listeners and reviewers who believe with increasing conviction that there really are advantages in valve designs which cannot be had from transistors. In fact this statement is a dangerous oversimplification. Few people seriously contend that valves are magically better than transistors *per se*. Most acknowledge that other related factors, for instance output coupling, power supply regulation and audio pass bandwidth, are at least equally important. Moreover, at the root of the current dispute, which led indirectly to the organisation of the Quad panel tests has been the growing conviction by some people that they can hear differences between amplifiers (be they valve or transistor) that are unexplainable by reference to the performance of those amplifiers under laboratory test conditions. In other words, there is growing belief that some amplifier differences which are not shown up by laboratory test equipment are nevertheless distinctly audible. It is this dilemma that has produced the word, and the arena, of 'musicality'. Whatever 'musicality' has meant before, what it means now is that amplifiers which measure the same do not necessarily sound the same. It follows, say the musicality faction, that many amplifiers, possibly all, sound different even though they may appear on paper to be the same.

The musicality bandwagon has become as crowded as the valve bandwagon. Already amplifiers are being advertised and sold under the musicality banner. Manufacturers are thereby effectively admitting that they don't know, and can't prove, why they have confidence that their product sounds better. This is by no stretch of imagination a satisfactory state of affairs. I for one am unwilling to spend my life savings on a piece of electronic equipment whose performance even the manufacturer doesn't understand and can't define. On the other hand I am reluctant to spend my life savings on a power amplifier that boasts impressive paper specifications and performance under laboratory test, but has subtle and invisible

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inadequacies which cause listener-fatigue after prolonged listening. Clearly, what is needed is some means of quantifying any differences that exist between amplifiers which are so far not quantifiable by laboratory tests, but nevertheless matter to the listener. After all, amplifiers are sold for long-term musical listening, not rapid laboratory testing.

In these respects there is common ground between the reputable and responsible manufacturers and those sectors of the audio press and public who have maintained that musicality matters. The divergence of opinion and the conflict that has arisen stems from extreme statements made, and extreme positions entrenched. On the one hand some press comment has been of 'chalk and cheese' audible differences between apparently similar amplifiers, between valves and transistors *per se*, and between other related design characteristics. On the other hand there has been an equally arrogant reaction from some quarters, effectively: 'if I can't measure it, it isn't there'. What is needed is a meeting on common ground in-between, and this is what the Quad tests were intended to be about.

In the July 1977 issue of this magazine Peter Walker publicly issued what amounted to a challenge. It is important to note (in the context of subsequent misquotes) that Walker acknowledged that 'in the broadest sense amplifiers must sound different because if the reverse were true we could all purchase the cheapest on the market and still obtain the best possible performance'. What P. W. argued was that a 'competently designed amplifier of top quality' should pass a comparison test of the 'straight wire with gain' type. In such a comparison test, an amplifier is followed or preceded by an attenuator which is equal to the gain of the amplifier and is compared with a direct connection obtained by by-passing the amplifier and attenuator circuit. Walker publicly staked his reputation on the ability of the 303 or 405 to pass such a test against all challengers. So the original challenge was whether the listener could hear a difference between the two situations a sufficient number of times to be statistically significant.

In October 1977 Chris Rogers, an established reviewer for various audio magazines, including *HFN/RR*, publicly took up the challenge but asked for the terms of reference to be both modified and extended in a number of ways. One suggestion by Rogers was that a Quad II valve amplifier should be included in the tests to make them more widely meaningful and valuable. Rogers also asked that only high quality master tapes be used as the program source and that these be replayed on a studio quality machine to obviate the use of a pre-amp or control unit. (Studio machines have a sufficiently high line output to drive a power amplifier direct). Other points were raised which readers can read for themselves by reference back to the original correspondence. In January this year Peter Walker replied, agreeing that the test should be based on Quad II, 303 and 405 power amplifiers and crystallising

his position as believing that 'although there are other minor differences in favour of later models (303 and 405) we do not expect these to be audible in normal use' and that the experimental procedures to be adopted would be 'designed to determine whether—and to what degree of confidence—the group are able to detect any differences whatsoever correlating with the power amplifier used'.

Preparations for the test progressed, with Acoustical engaging James Moir Associates of Hertfordshire to conduct the experiment on an independent basis. The prospect of the test aroused considerable interest and Acoustical decided against formally and openly challenging by name every journalist who had either published criticism of Quad amplifiers or claimed to be able to distinguish differences such as those between the sound of valves and transistors. The intention was that the test should not harden existing conflict or generate new vendettas. The only contentious reviewers invited, therefore, were those for whom Acoustical have respect and with whom they have been in dispute over issues such as amplifier musicality. In practice this meant that Chris Rogers, Martin Colloms and Paul Messenger were invited (although there are of course others who have written about musicality and are respected within the profession). It was amicably agreed that the movement by Messenger to a new editorial position made it impossible for him to participate. Both Colloms and Rogers were anxious to take part, but all-round agreement could not be reached on various aspects of the test procedures, so in each case participation did not materialise. The reasons were unfortunate but eminently understandable.

Although Peter Walker had made it clear that no personal 'we proved you wrong' vendetta situation would arise and that the tests were intended to provide statistical information on the validity or otherwise of the Quad contention that their three amplifiers differ significantly only in power output, it would nevertheless have been an exceedingly risky move for a disputing journalist to take part. It was, for instance, confirmed by Acoustical that the statistical analysis used would show up abilities to distinguish 'chalk from cheese' by just one member of the six man panel. By the converse token, the same analysis could show up the inability of everyone concerned to hear differences.

Although the tests were modified further in accordance with some of the suggestions made by those invited, other suggestions were rejected. For instance, a Studer A80 studio tape machine was brought in, greater attention than initially promised was paid to the problems of lining up the machine in azimuth, etc, on the collection of tapes used as the program material, and a conventional comparator for comparative switching was not used. Nevertheless, a system of double-pole relays was employed despite Mr. Rogers' insistence that there be absolutely no switching of any kind in the signal path. There was also dispute over the listening room, the speaker cable

connections, and the length of musical passages to be used for the test. The refusal of Mr. Walker to bend on all points, bearing in mind his mounting bill in time and money, was as reasonable as the reluctance of those potentially in the hot seat to commit themselves in advance to a test that, through no fault of their own or intention of Acoustical, might embarrass them for years to come. The average reader of a popular hi-fi magazine is not always overly concerned with reasoned details, and Acoustical had openly admitted their intention to publicise the test results. If a popular press headline runs 'famous audio writer proved unable to tell chalk from cheese' it is of no consequence what the small print subsequently explains (even if it explains anything).

After an experimental test session held in advance with a 'friendly' panel and intended to iron out procedural and technical bugs, the tests proper were held at James Moir's home in Hertfordshire in March. The listening room, while doubtless not exactly in accordance with IEC dimensions (whose listening room is?) appeared to give rise to no problems. The panel was made up of six listeners: John Borwick, John Crabbe, Laurie Fincham, Mike Ballance, Jim Rogers and David Stripp. Although none of these has ever claimed to be able to hear the chalk and cheese differences spoken of by others, all are respected names and ears in the audio press and industry. Nevertheless, it does remain a great pity that none of those who have claimed to be able to hear musicality differences could have taken part. After all, if a test is intended to prove or disprove a claim, it makes most sense to have a claimant participate. Perhaps a future test could preserve anonymity until the release of names and results was agreed by all parties?

Yamaha NS 1000 loudspeakers were used (although this would not have been Acoustical's preference) and the tapes—mostly from the BBC—were of orchestral and middle-of-the-road pop music. As per IEC format, half-minute musical sections were repeated twice, with the panel asked to choose between A and B. In some cases the sound was being reproduced through a 405 power amp, in other cases through a 303 power amp, and in other cases through a parallel triple of Quad II valve amps. (Parallel tripling was necessary to bring the power capability of the valve chain up to that of the solid-state chains and prevent clipping. A scope and headphones comparing power amplifier input with attenuated output was used to keep a constant check on clipping). The panel at no time knew which amplifier they were hearing sound from, the aim being to find any statistical divergence from purely random results. This is why a large number of tests are needed. If you flip a coin two or three times you may well get heads each time. But if you flip a coin a hundred times you are likely to get 50 heads and 50 tails. Four musical passages on tape were repeated six times for each test and the test repeated four times to produce a total of 96 tests.

to p. 77

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From what could be gleaned from the rather too hurried sight of the test set-up available to the press and the even more hurried listen to a little of the test material, there were no glaring errors in the procedures. But nevertheless I for one am left with distinct reservations which contribute to my lack of real interest in the results, whatever they may be. First and foremost, all the arguments, pronouncements and protestations have centred round the ability or otherwise of listeners to hear *differences* between apparently similar amplifiers. The original Walker challenge was geared to the identification of such differences. But the test questionnaire required the panel to specify their 'preference for A' or 'their preference for B' or 'no preference between A and B'. A fourth question, on 'reasons for preference or otherwise', was asked but not used for statistical analysis.

There is a world of difference between *preference* and *difference*. 'Preference' is arbitrary and subjective. 'Difference' is objective. Acoustical believe that to ask the panel to identify preference and to ask the panel to identify difference is to ask the same question. I beg to differ. Especially now that close-miking is virtually the recording norm, there is no holy grail or tablet of stone on which perfection in sound reproduction is defined. With no definition of perfection, the question of what is good, bad and preferable becomes at best arguable and at worst meaningless. It seems that Acoustical were persuaded that a 'forced choice' really is necessary for statistical purposes and shows up both difference and preference. I still beg to differ.

From the discussions over drinks and dinner (courtesy Acoustical) that followed the test, no one could fail to have sympathy with Mr. Walker, who readily acknowledged that whatever tests they had run there would always have been some complaints. At least one member of the panel expressed reservations over the quality of the master tapes. Others thought longer or shorter test passages would have been preferable. Although low-resistance cables were used to connect the loudspeakers, these were not of the pseudo-Litz type currently in fashion. This may or may not be audibly relevant. Although no control unit or pre-amp and no comparator for switching between chains was used, and although polarity was maintained between chains to compensate for the phase inversion that occurs in the 303 and 405 but not the II, relay contacts inevitably formed part of the circuits. And there are of course those who believe that *all* audio contacts should be of non-corrodable metal, ideally gold.

It is here perhaps obligatory to note that James Moir himself can have left no doubt in anyone's mind from the outset that he believes much of the current controversy over musicality to be codswallop. Although an understandable attitude for an engineer, it is perhaps not the ideal attitude for someone entrusted with arranging independent scientific tests intended to establish hard facts in a heated controversy. Moir may well, for instance, be

right in arguing that the minutely small extra resistance injected into an audio circuit by the formation of oxide on a relay contact is incapable of producing audible results. But there is no *guarantee* that he is right, especially if the resistance is uni-directional in semi-conductive and thus rectifying manner. It is, for instance, just conceivable that on transient peaks it is relevant. After all, the whole musicality controversy centres round extremely subtle audio considerations. If they were less than subtle there would be no dispute, despite the 'chalk and cheese' syndrome.

One can readily feel sympathy for the impatience shown by respected elder statesmen of the engineering profession such as Moir. They have grown sick and tired of reminding young innocents of obvious facts of audio life. But there is always a danger that impatience will shut the door on just that one query that holds a key to the answer. For far too long, designers who should have known better overlooked or at least underestimated the microphonic properties of the turntable-cartridge combination and its contribution to effective dynamic range under modern music listening conditions. Lateral thinking needs a very open mind. So does scientific testing. And wasn't the *HFN/RR* supplement on turntables by Mr. Rogers (December 1977), one of the first (if not *the* first) reviews to incorporate analysis of a system playing a blank disc in a loud sound field—thereby to reveal feedback and microphony of the system in a real music situation?

But quite apart from such points, and subsequently to the tests, Peter Walker has stated: 'I have *never* said that if two amplifiers have the same numbers on the standard specification sheet, they will sound the same. What I have said is if two amplifiers sound different there is no difficulty in providing quite rational (measured) reasons for such differences. These two statements are by no means the same; a good amplifier has to meet a host of requirements not touched on by the standard specification. A misunderstanding between these two statements may well be part of the controversy.'

Perhaps the most helpful and hopeful suggestion came from KEF engineer Laurie Fincham, who sat silently through the generally inconclusive discussions that followed the test. Fincham is clearly as anxious as Peter Walker to establish, once and for all, whether there really is any audible difference between amplifiers which is not yet revealed by currently routine laboratory test procedures. Both agree that if there is such a difference then the answer is not to worship it, but to isolate it and develop a test technique to reveal it. 'What you must do is this' said Fincham: 'Next time you hear a difference in an audio system that you believe to be significant, leave the system as it is, shut all the doors and windows so that it doesn't escape and call in me, Quad or the BBC. If we can hear what you have heard we'll tear the system apart and pin it down on an engineering basis'.

So here we have another challenge. Laurie Fincham can be contacted c/o KEF (Maidstone 672261), Peter Walker can be contacted c/o Quad (Huntingdon 52561), and David Stripp can be contacted via the BBC. They are waiting for your calls. But be warned: although genuinely anxious to isolate and analyse any audible differences hitherto undisclosed by routine testing, they are unlikely to suffer fools gladly. Expect, for instance, very little sympathy if you are running a 15 watt valve amplifier, like the Quad II, into modern inefficient speakers, like KEF 104s. The indefinable something that you like so much in the sound is very likely just plain old-fashioned 'soft' clipping, about which there is nothing magic whatsoever. It shows up plain as a pikestaff on a scope, appeals to lay ears and, according to Acoustical can, if you really want it, be built into a modern Quad transistor power amplifier as an added distortion extra. ●

THE RESULTS

The above article arrived just before our press deadline, but the latter had already faded into the past before the listening test analysis became available. We now have all the figures and a full explanation of the statistical technique applied, but under great pressure of time and space we can do no more than print the following summary of results.

Next month, we hope to publish an article describing a rather similar test conducted with college students, and following that we understood that Martin Colloms, who is convinced that under some conditions there are significant audible differences between high-grade amplifiers, will be pursuing yet another properly controlled investigation. The Quad summary now follows—Ed.

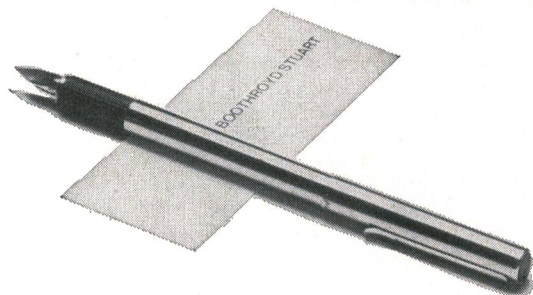
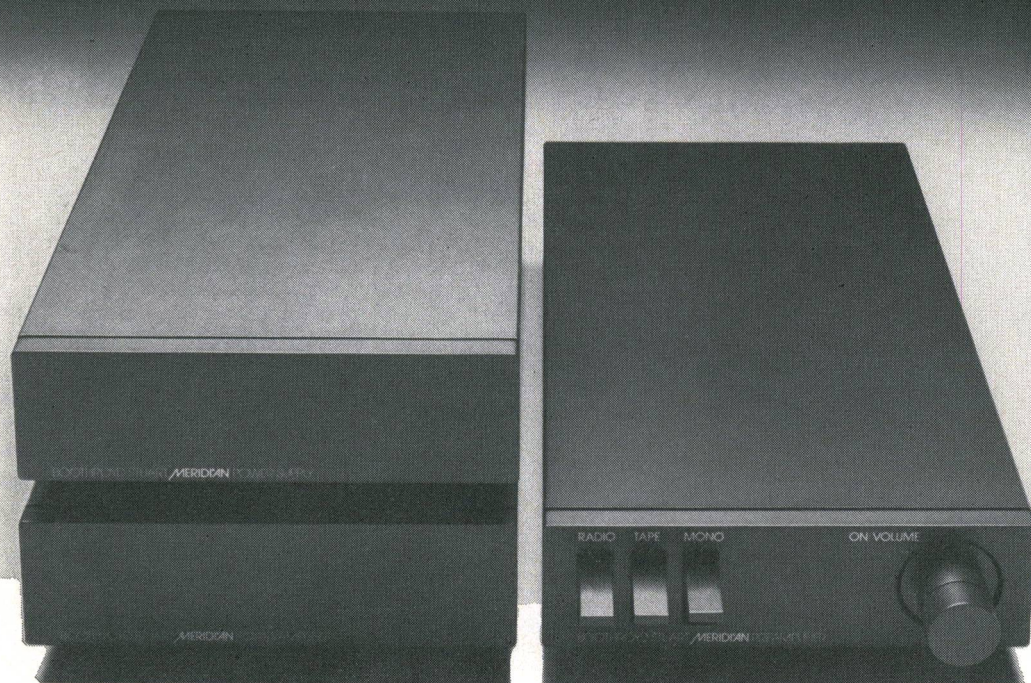
SUMMARY

'There are sufficient data to allow two of the standard statistical tests to be applied, to determine how far the result obtained is likely to be due to sheer chance (luck) rather than to real difference in performance of the three amplifiers. The 50% probability test applied to a paired comparison of samples reveals how far the result obtained is due to chance and how far it is due to a real difference.

'As a second test of the validity of the listening panel's opinion, the Chi² test was applied to their scoring. Both tests confirm that the preferences expressed by the panel were no more than would be achieved by chance alone.

'It is worthy of comment that a week before the listening tests described we carried out a trial run to check the operation of the switching system and the scoring and analysis techniques. This used a different but equally expert listening panel and a different selection of musical program, but analysis of the data obtained showed that the consensus decision of this trial panel was in excellent agreement with the findings of the second panel, and confirmed that the decisions were no better than might be expected from sheer chance'.

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Subjective Sounds

Paul Messenger considers four loudspeakers

RAM are a relatively new loudspeaker company, and while it is true to say that they have not yet set the world alight with any Great Leap Forward or Technological Innovation (a point in their favour, I suspect), they do seem to provide a solid, well-designed product at a very competitive price. I say this on the basis of their *Mini-Bookshelf* model. Once again I must make the qualification that I understand there have been minor improvements to this model since my particular samples were produced, though I cannot verify this, yet the original model is certainly a worthy-enough performer.

This speaker is typical of a new generation of 'baby' boxes that have undoubtedly stemmed from the realisation that the LS3/5A is not only a remarkable speaker for its size, it is also a remarkable speaker full-stop. These 'mini-monitors' have a number of actual advantages over their bigger competitors, such as excellent dispersion and stereo imaging, generally low coloration (after all there is not much cabinet to vibrate) and, due to the small, comparatively cheap cabinet, a fairly reasonable price, even though they also have corresponding disadvantages, such as no real bass to speak of and low efficiency. Although not producing state-of-the-art audio, I am certain that many people would find that the sound quality gives numerous larger and more pretentious systems a run for their money, and I think it is at least partly true to say that reduced bass is better than bad bass, that good bass is not the same as a lot of bass, and is also a pretty rare commodity amongst hi-fi speakers anyway.

To summarise, the *Mini-Bookshelf* has many qualities in common with the better established and more expensive mini-monitors, generally smooth frequency response with the characteristic slight 'fizz' that seems to accompany the now widely used Son-Audax tweeter. Despite the RAM's small size, it can be thrashed really hard by a powerful amp with no more distress than a slight audible increase in distortion. I still think it is worth going for larger and more detailed speaker systems, but if circumstances prevent this I think the *Mini-Bookshelf* is a very interesting proposition. Although presumably designed for shelf mounting, it appears to work equally well—if not marginally better—on open stands.

Another of the smaller English speaker companies is Bedfordshire-based SMC, and their *Super Saturn* shows a similar overall approach and philosophy towards design. This is a two-unit sealed-box design, and is slightly larger than the RAM at $10 \times 9\frac{1}{2} \times 18$ in. The ubiquitous Son-Audax tweeter unit is again used, once more adding its characteristic timbre to the HF range, but this time it is partnered by a Dalesford 8 in. bass/midrange unit. Once again it is a very insensitive design, but is capable of generating quite high sound levels when driven by a powerful amplifier. The efficiency is sacrificed for a

bass extension which is greater than usual in an enclosure of this volume, although there were aspects of the bass quality that I was less happy about. I was often aware of at least one resonance and a general clouding of detail.

Overall balance of the *Super Saturn* could be described as 'warm', and best results were obtained in my room with the speakers mounted on stands and clear of surfaces, as this helped to avoid exaggerating the bass resonance. I don't think the design is outstanding, but I have heard more expensive speakers producing far less acceptable sounds, and the *Super Saturn* seems to offer a pretty good mix at the price. The sound is not as detailed as I have heard on some systems, but at the same time it is rarely strident or offensive. SMC also deserve praise for the overall appearance and quality of finish, which is well above average.

A third speaker in the same general class is the Celef *Domestic 2*, and while the overall conception is similar, there are quite significant differences in the mix and compromises that have been adopted. To start with, the speaker is noticeably more sensitive than the previous two models, although it is also a sealed-box design and is roughly halfway between the other two in physical volume. The price of high sensitivity here is coloration and bass extension, the units being a paper-coned Peerless bass/midrange and a Peerless tweeter, both of which are more efficient over the majority of their working frequency range than their counterparts in the other designs. Despite the sensitivity bonus, the *Domestic 2* did not seem to be capable of any higher sound levels when driven from a powerful source, as distortion increased at about the same sound level as with the others.

Although the bass is restricted in quantity and extension, what there is of it is even and well-controlled, and the speaker responds well to being placed close to a wall. The treble, however, is less well-controlled, and I was always conscious of a number of resonances, which caused significant and sometimes unpleasant sibilance exaggeration and imparted a 'wiry' character to some instruments. The midrange also displayed a greater degree of coloration and response unevenness than the bextrene/Audax com-

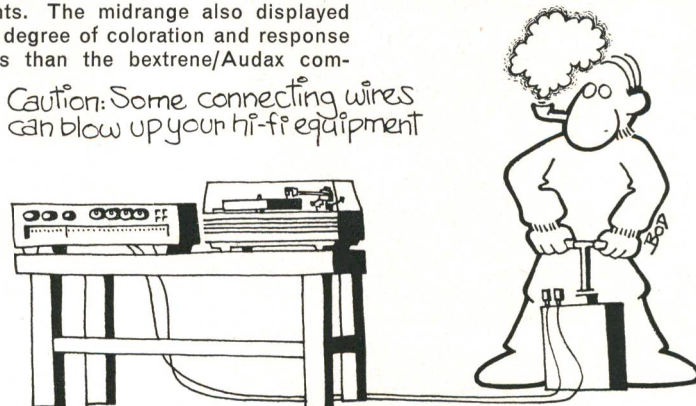
binations. But despite these reservations the *Domestic 2* did prove to be a very open and detailed speaker, and I don't believe this was merely caused by uneven response or 'presence' boost. I do believe that some speakers transmit detail better than others, and as far as I am concerned the Celef scores well in this respect.

Cheapest of these four designs is the Wharfedale *Linton 3XP*, and perhaps surprisingly it is a three-unit device. However, biggest is not always best, and I must admit I was rather disappointed by this model, finding aspects of the sound quality rather veiled and confused. The sensitivity (judged subjectively in the midrange) was slightly lower than the Celef, but the bass was considerably more extended. There was some boominess in the bass, so stand-mounting, or at any rate avoidance of rear walls, is likely to work best. The stereo image is not quite as precisely focused as in the other three models, and this is probably attributable to the side-by-side mounting of midrange and tweeter units.

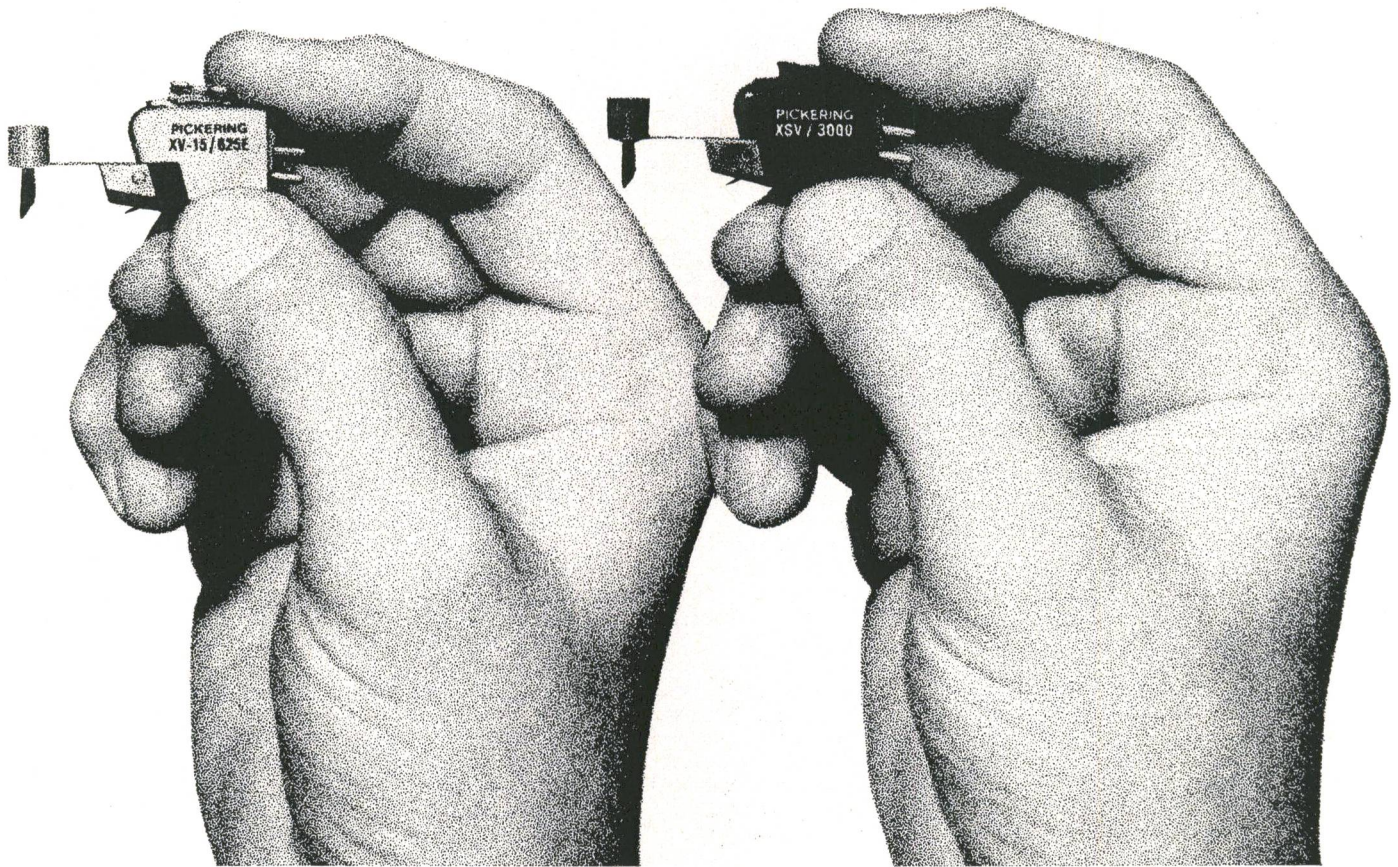
The overall sound balance is fairly similar to the SMC, but coloration is more noticeable, and the sound is not as detailed. The balance means that the speaker is rarely strident or offensive, but rather I found it bland because of the detail loss. I must admit to a little surprise at this result, because superficially the design looks a real bargain. I have suspected for a long time that crossovers were undesirable *per se*, and I can't help wondering whether the more complex circuitry needed to couple three units may be part of the reason. Indeed, considering the modest size of the bass unit, I am surprised that it was thought necessary to use three units at all (the benefit in power handling being largely academic in a speaker with such modest pretensions), and I am inclined to suspect that it may have more to do with marketing than performance. Notwithstanding these criticisms, the speaker is well made and finished, and offers good bass extension and power handling for the price.

To summarise, then, four designs in the same price bracket, which will all appeal to different ears and systems. In my room and with my systems and preferences I would probably go for the RAM or Celef, the former the smoother but more expensive, the latter offering greater sensitivity; but the Wharfedale is cheaper still and has more extended bass, while SMC shows no significant weaknesses but has the best finish.

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STAN CURTIS* looks afresh at some points raised in the Great Amplifier Debate

Amplifier Noise & Clipping

THE first two contributions to the 'Great Amplifier Debate' in the January 1978 issue of *HFN/RR* proved to be very readable, thought-provoking stuff, but unsupported by any scientific rationale. Ralph West's thoughts on noise were particularly unusual, so I think the subject of amplifier noise should be briefly examined before we look at Ralph's new theory.

There are three main types of noise encountered in electronic circuits. These are thermal noise, low-frequency (1/f) noise, and shot noise. Thermal noise is the most familiar effect, and is the result of random thermally excited vibration by charge carriers in a conductor, as first observed by J. B. Johnson in 1927. For this reason it is often called 'Johnson noise'. Thermal noise is composed of frequency components that have the same power in each Hertz of bandwidth; thus a Fourier analysis gives a flat plot of noise versus frequency. This noise can be termed 'white noise'. A simple equation defines the thermal noise generated in a conductor:

$$E_t = \sqrt{4KTR\Delta f}$$

Where Δf = noise bandwidth of the measuring system

$$4KT = 1.61 \times 10^{-20} \text{ at room temp (290}^\circ\text{K)}$$

R = resistance of the conductor

The wider the bandwidth the more noise is measured, more or less indefinitely, following the old theory—'open the window wider and more muck flies in' (see fig. 1). Equally, the higher the resistance of the conductor, the higher the level of noise. So, theoretically, capacitors and inductors generate no thermal noise. In practice, of course, both have some internal DC resistance (e.g. dielectric losses in a capacitor) so these components cannot be considered entirely free of noise. Resistors generate an additional type of noise termed 'excess noise'. This usually occurs when a direct current flows through a granular material such as that in a carbon resistor. It can be visualised as electric current arcing across between the individual granules, giving a form of low-frequency noise. Carbon resistors are particularly noisy in this respect. Progressively better are carbon films, metal-films, thin films, and wirewound resistors—the latter generating practically no excess noise.

The second classification of noise, low-frequency or 1/f, is also known variously as

* *Mission Electronics*

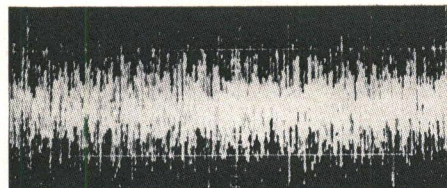


Fig. 1 (a) WIDEBAND WHITE NOISE

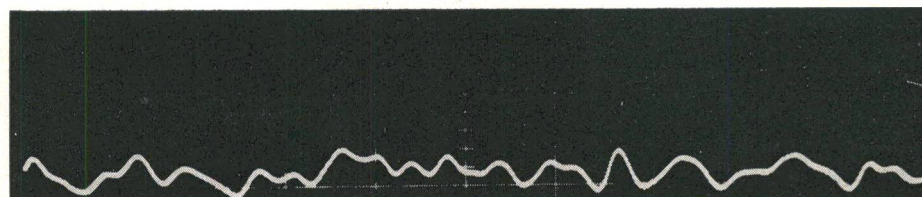


Fig. 1 (b) WHITE NOISE LIMITED TO THE LF BAND

'flicker noise', 'pink noise', 'semiconductor noise' and 'contact noise'. Its main characteristic is that its intensity increases, without limit, as the frequency decreases. Researchers have measured 1/f noise as low as 6×10^{-5} Hz, which corresponds to a cyclic period of some $4\frac{1}{2}$ hours. One can almost visualise the DC-coupled system where some awful event happens five times a day!

This 1/f noise is quite common, being found in most electronic components, e.g., valves, transistors, diodes, resistors, etc., so it is impossible to build an amplifier which is totally free of low-frequency noise.

The third classification is 'shot noise', which is observed in both valves and semiconductors. The origin of such noise can be described as follows. Current flow through, say, a valve, is not smooth and continuous but is made up of pulses of carriers each carrying an electric charge. The pulsing is irregular and is referred to as 'shot noise'. A similar potential barrier (anode to cathode) exists in the transistor, most importantly the emitter-base junction where the same pulsing movements of charge carriers take place.

However, as Ralph West correctly points out, valves have a 'space charge' between their electrodes and this tends to smooth out the current flow. In doing so it reduces the shot noise to less important levels. To avoid confusion, however, it should be remembered that despite its emotive name shot noise is white noise having equal power across the frequency band, and not, as is often thought, a particularly nasty form of low frequency noise.

Let us consider a transistor amplifying stage and its sources of noise. Firstly, thermal noise is contributed by the resistors in the circuit, particularly the base biasing resistors. As far as the transistor itself is concerned the two main noise sources are: (i) thermal noise of the base-resistance, and

(ii) shot noise of the collector current times the emitter resistance. Thus low noise can be ensured by selecting a transistor with a low base resistance and by operating it at a low collector current (e.g. less than 100 μ A). The level of low frequency noise is again dependent upon keeping the base resistance low. This 1/f noise is caused by charge carriers being interrupted in their flow by impurities and defects in the surface of the transistor. Thus it is dependent upon the manufacturing process and the encapsulation of the 'chip'. It is preferable to use a transistor encapsulated in a hermetically sealed metal can, and not to substitute transistors from a different manufacturer to the original. Another help in reducing low-frequency noise is to limit the LF bandwidth at the second or later stage, to

roll-off the lower frequency components of the noise.

As Ralph West again points out, the use of RIAA equalisation on the most sensitive input (with its 19 dB boost at 20 Hz) increases the level of 1/f noise and low-frequency components of the white noise. When a low-level signal is passed through a noisy amplifier it will look fuzzy and hazy (fig. 2), but when that same signal is subjected to RIAA equalisation the effect is disconcerting (fig. 3).

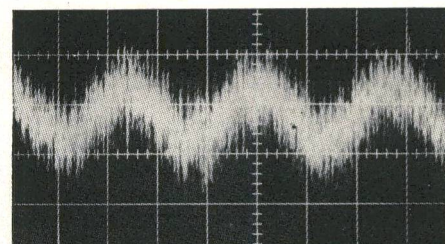


Fig. 2: SINE WAVE SIGNAL IN WHITE NOISE

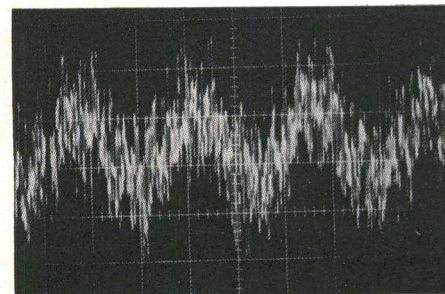
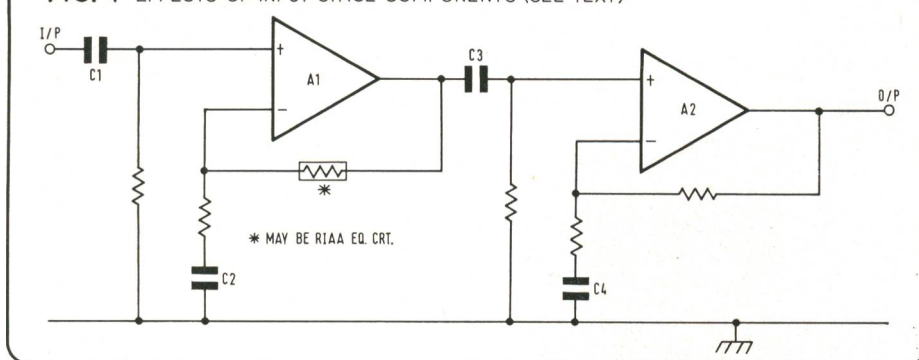


Fig. 3: SINE WAVE SIGNAL IN WHITE NOISE AFTER RIAA EQUALISATION

Some other considerations arise in relation to RIAA correction. Referring to fig. 4, if the LF bandwidth is determined primarily by C1, then the 1/f noise generated by A1 is allowed through to

over

FIG. 4 EFFECTS OF INPUT STAGE COMPONENTS (SEE TEXT)



stage A2. This does not happen if the overall LF bandwidth is set by C3 and C4. However, it may be desired to limit A1 input bandwidth because of its poor overload capability at ultra-low frequencies, in which case some compromise may be necessary, although a better solution would be a linear input stage with RIAA equalisation at a second stage.

Returning to white noise in general, let us now consider whether this noise can account for the difference in 'sound' between a valve and a transistor amplifier. In a correctly designed system the signal-to-noise ratio is determined by the first stage, so let us consider that. The first transistor will normally be operated at low collector current, say 100 μ A. Now this is a standing DC current and will be increased

higher noise frequency bandwidth. It is likely, therefore, that such a change would be swamped by the other static noise in that stage. It can be seen that the variance in noise level will be even less at lower signal levels. So it seems that Ralph's 'modulation noise', attractive though it is as a concept, must go out of the window. Assuming, that is, that the amplifier in question is of a half-decent design—and most are!

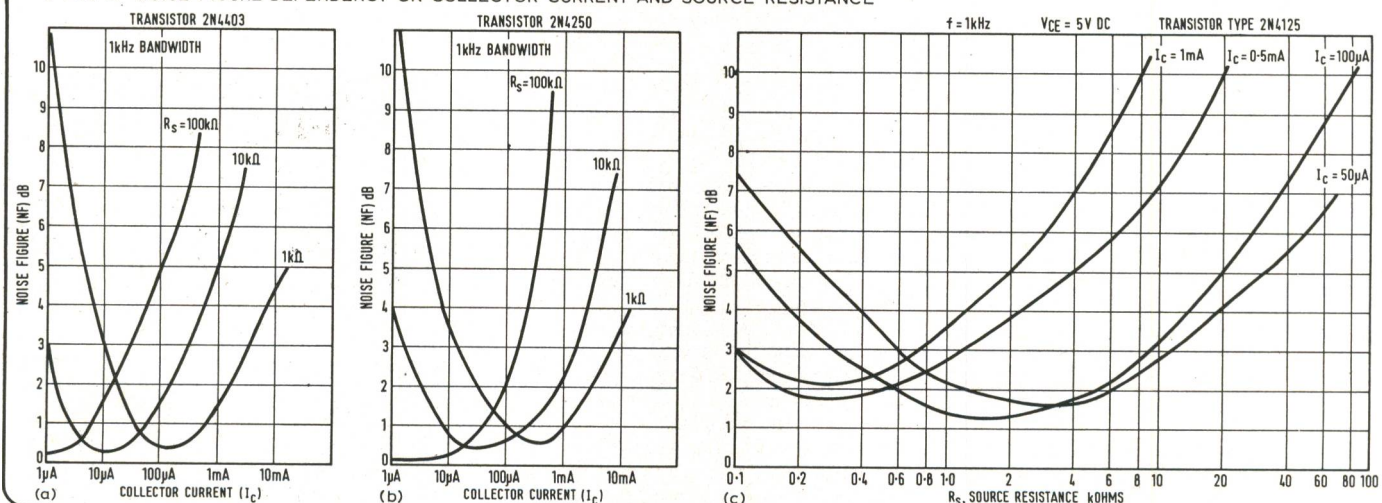
Now to look at the problem of 50 Hz and 100 Hz hum. I cannot comment too deeply on the results of the modifications made to Ralph West's Quad II valve amplifier, but if time permits I will try the modifications on my own Quad IIs. Only one thing worries me: are original condition Quad amps worth more than 'improved' and modernised

metrical differential device. In such an amplifier, ripple rejection is virtually dependent upon the balance of the first stage. It must be admitted that some amplifiers are poor in this respect and as a result will be found to have a low-level (but just audible) 100 Hz saw-tooth waveform at the output. As the output rises, more current is drawn from the supply, the ripple increases dramatically, and the output ripple rises and so helps to make the sound generally more muddy and edgy. Whereas noise may often be masked during loud passages (a factor most noise-reduction systems rely on), the same is not completely true for 100 Hz ripple. Noise is random, whereas hum is a repetitive signal that the ear can lock onto. In my own experience I found this to be a problem with the Cambridge P50 unless care was taken to match the r_e of the input-stage transistors in the power-amplifier. In all fairness, though, I have found several Japanese models to be far worse than the old Cambridge amp.

However, modern power amplifiers have ripple-rejection of 90 dB or more, so the problem is not normally encountered. I have tried operating such an amplifier with a much improved power supply and there was no audible change in noise level or 'openess'. The bass 'sound' changed in character, but that was a function of the power supply having a lower output impedance and better regulation. (Again, be careful of false assumptions.)

To be fair to Ralph, I have found some amplifiers to have excellent ripple-rejection

FIG. 5 NOISE FIGURE DEPENDENCY ON COLLECTOR CURRENT AND SOURCE RESISTANCE



or decreased as the signal current is added, so let us assume that the collector current varies over the range 50–150 μ A. How does this affect the noise? Fig. 5 shows the dependence of noise figure on collector current for several source resistances and typical low-noise transistors. If we assume the optimum source resistance to be 1 Kohm, then the variance in noise figure would be less than 1 dB. Also, the curves show that this small degree of NF variance is true whether the source resistance be 200 ohms or 10 Kohms, and only worsens above 10 Kohms and a

versions? I suggest that the improvement in sound quality will be found to be due to more than a reduction in HT ripple. It is always dangerous to make an assumption when so many variables have been changed, e.g. ripple rejection, output valve bias, HT supply level, supply impedance, etc.

However, if we assume for a moment that ripple is the culprit, can the same improvement be expected with a transistor amplifier? If we examine a typical good quality transistor amplifier (with its nasty, crude power-supply) we will usually find that it is designed as a balanced sym-

under quiescent conditions but to have far worse rejection under large signal conditions. Intermodulation can then occur between the ripple and the signal to produce sidebands, with a consequent loss of definition. But as I feel that Ralph West's ideas (on this occasion) are more armchair thoughts than the result of research, I decided it would be useful to try some crude tests to probe the theories.

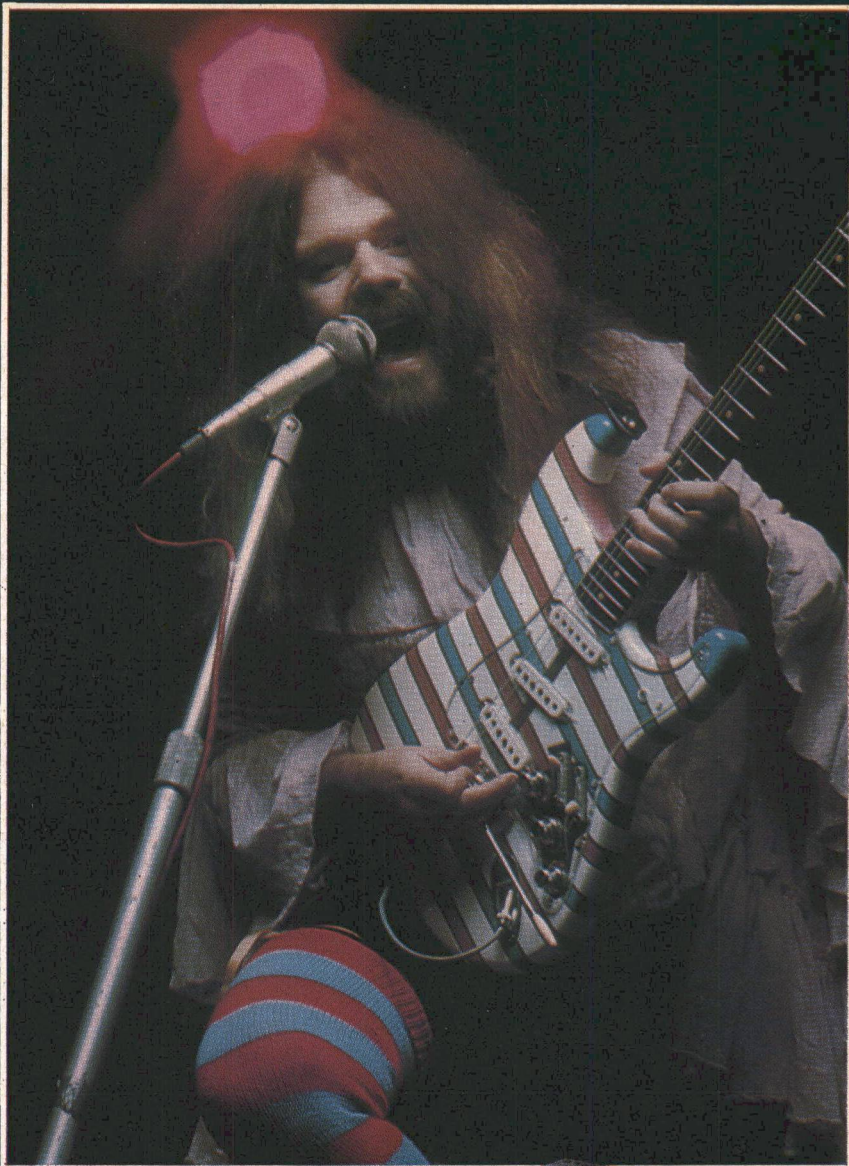
A listening test was set up using a Quad II amplifier system. Arrangements were made to inject LF noise of below

to p. 85

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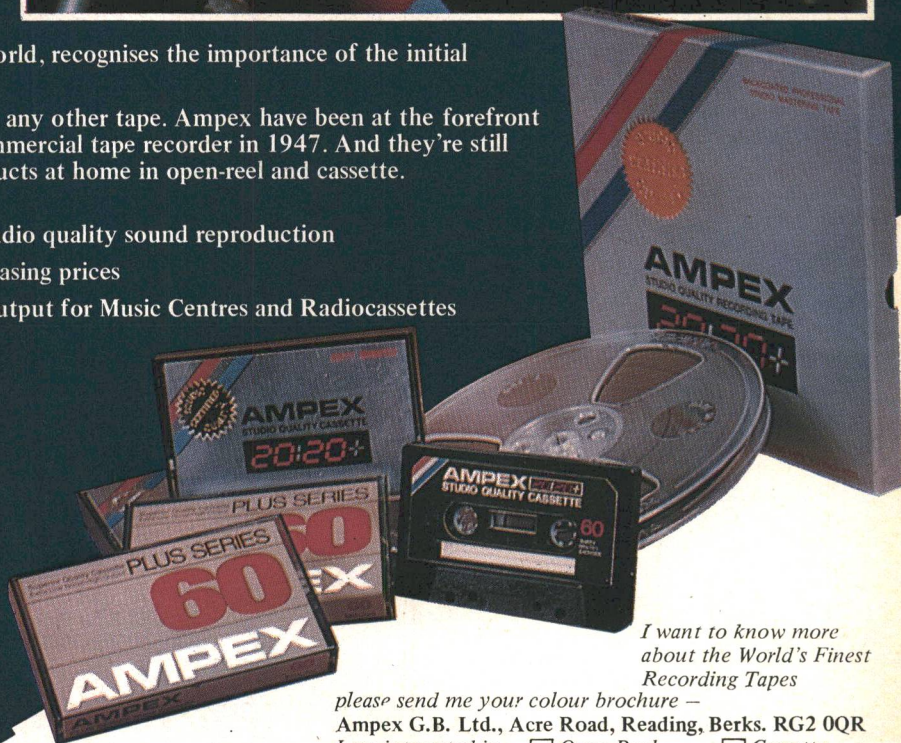
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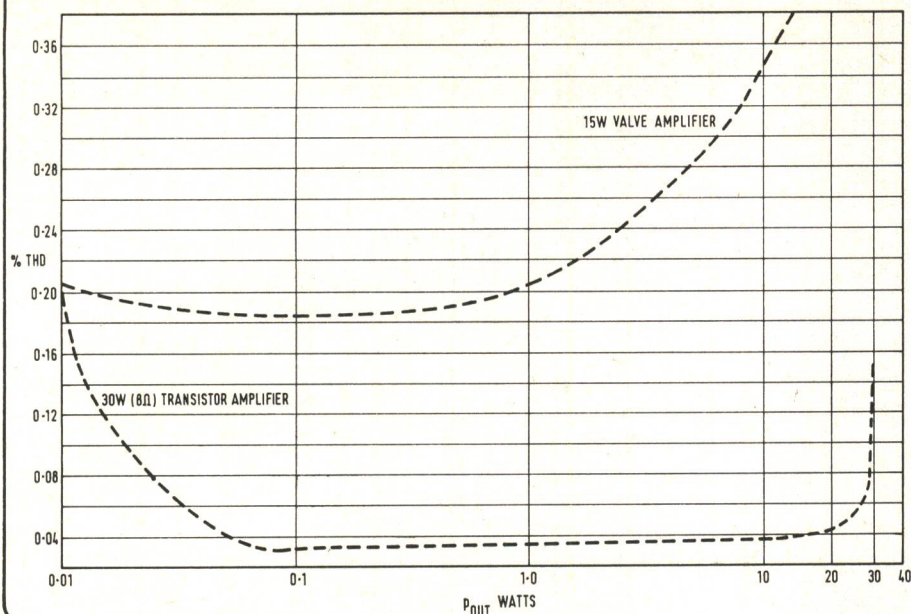


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FIG. 6 COMPARISON OF LIMITING CHARACTERISTICS



40 Hz (generated by a transistor stage) into the control unit. The music was played with no LF noise added and then the noise level was gradually raised. The low-frequency noise eventually became objectionable, but at no point made the valve-amplifier sound 'different'. In fact it sounded like a valve amplifier with a faulty electrolytic capacitor in the signal path.

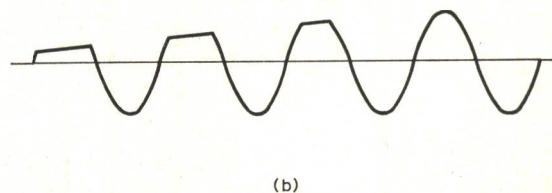
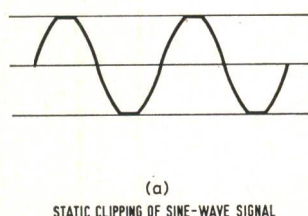
And so to overload. In his article which accompanied M. West's, Richard Oliver seems to suggest that the audible 'differences' between some transistor amplifiers and some valve amplifiers could be due to overload problems. The only point made, though, is that a 15 W (rated) valve amplifier can give a subjectively higher output than a 15 W transistor amplifier. This only shows the fallacy of our traditional methods of quoting specifications. At Mission Electronics we are quoting the output of our new power amp in terms of the undistorted (<1%) signal voltage that can be sustained across a given range of output loads for periods of 10 mS, 100 mS, one second, and continuously. This information summarises an amplifier's capability of handling a momentary peak and of driving a 'difficult' loudspeaker.

One well-known difference between valve and transistor amplifiers is their behaviour when the signal is driven into clipping. A comparison drawn in fig. 6 shows that a valve amplifier clips 'softly' against the 'hard' clipping of a transistor circuit. The comparatively high amount of negative feedback used in transistor amplifiers effectively linearises the transfer characteristic until a stage runs out of current. Suddenly, the output voltage ceases to follow the input voltage and momentarily the output is the DC supply rail with no AC component of the signal. A well designed amplifier will recover immediately the signal level is reduced. Unfortunately, a number of amplifiers exist that tend to

system. A transistor stage was inserted into the signal path such that 'hard' limiting occurred at an equivalent output of 50 W. And, yes, the amplifier did lose its effortless quality. The Radford was now replaced by a specially modified Lecson AP3 Mk II capable of 200 W output. A single valve stage was inserted into the input signal path and its HT supply set so that the THD rose to 5% at 170 W output, i.e. the AP3 had 'soft limiting'. Although there was a slight drop in detail at low levels, at high levels the reproduction seemed to go 'soft' and bass drums lost their sharpness. The simple tests subsequently became more detailed, accurate and exhaustive, but with interesting results. However, that's for another occasion.

Although Ralph West, Richard Oliver, and other contributors are to be encouraged in their attempts, I have so far found that differences between amplifiers (where they exist—which isn't always) cannot be blamed on overload, noise, Class-A vs Class-B, etc, in isolation, but are usually due to the interactions of several effects. It is therefore important that conclusions should not be drawn from incomplete

FIG. 7 STATIC AND DYNAMIC CLIPPING

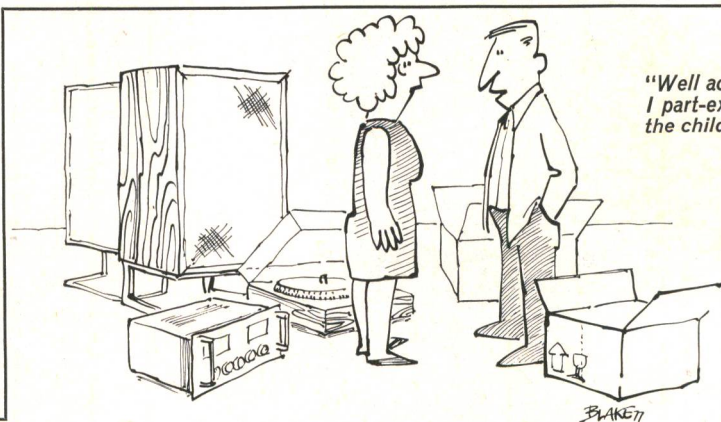


FED TO THE SAME AMPLIFIER, CAUSED BY A SHIFT IN DC BIAS CONDITIONS UNDER INITIAL LARGE SIGNAL CONDITIONS.

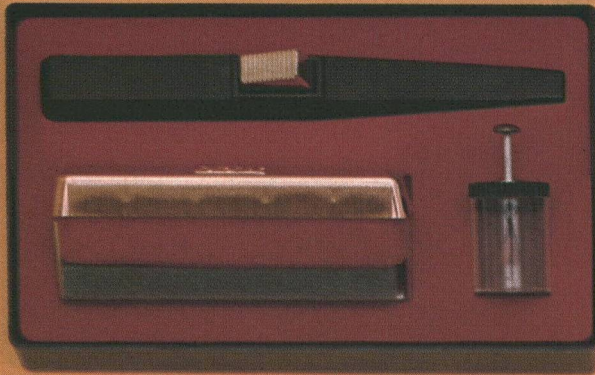
'latch-up' (or take a finite time to recover) when they are driven into clipping suddenly. Tone-burst testing brings out these defects (see fig. 7).

Rather than cover the whole subject of clipping in depth, I will quickly describe another crude test. A monitoring system was set up using a Radford STA 100 valve

information. Comparative tests become long and exhausting before: (i) the perceived 'differences' can be always detected, and (ii) the quantified differences in electronic performances are always found to give the predicted effect. But then, any good excuse for spending the weekend listening to music! ●



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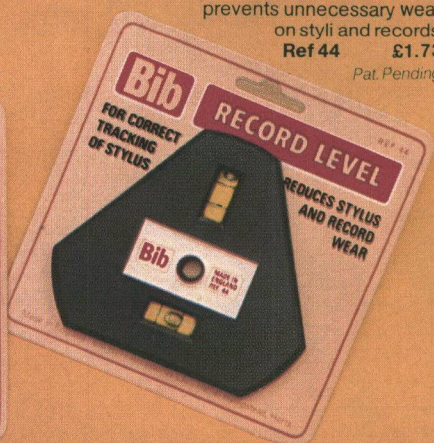
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Tape Matters Douglas Brown

THE International Federation of Sound Hunters (FICS) is publishing another issue of its 'Bulletin' this month and any reader who wishes to learn more about the activities of recording amateurs throughout Europe should be sure to get a copy. There is no charge, but a stamped addressed envelope, measuring at least 10x7 in., should accompany the request, which should be sent to John Bradley, 33 Fairlawnes, Maldon Road, Wallington, Surrey.

The International Federation may be said to be in very good shape; amateur recording as an organised activity flourishes on the Continent. The first issue of the 'Bulletin' last year carried news of this activity to about 12,000 people; copies were distributed through the local clubs, at hi-fi exhibitions in several countries, and over the counters of many leading hi-fi dealers. The leading firms in the industry backed the effort with advertising which not only covered the costs, but effectively doubled the Federation's working budget for the year.

Lack of funds has always been a problem for amateur tape clubs and has affected the International Federation as much as the small provincial group. A formula seems to have been found, however, to enable the big international companies to support effective

amateur organisation of the hobby by a straight-forward commercial device—i.e. advertising the product to a particularly valuable and well-informed audience.

I have high hopes, therefore, that the work of the FICS can take big strides forward in the next few years. An ambition to make the 'international' part of the title more meaningful by bringing in affiliates from outside Europe remains to be realised. Japanese delegations attended the FICS annual congresses in Lausanne in 1976 and in Amsterdam in 1975 and, as a result, an All-Japan Federation of Tape Recording Clubs was created. Discussions have taken place about a congress in Tokyo, but it seems to be a little way off.

Meanwhile, this year, in October, amateurs from all over Europe will assemble in Munich, where the Bavarian Radio and one or two of the principal German tape and equipment manufacturers promise a very well-organised congress and session of the jury for the 27th International Amateur Recording Contest (CIMES). Germany is one of the countries where the amateur movement is most active and widespread; probably only in Switzerland is its scale of activity matched, though the Dutch are not far behind.

In Britain there seems to have been some-

thing of a recession of interest in the last few years, but it is probably a passing phase. Something of the same kind has happened in Norway. Elsewhere, however, particularly in Italy and in Austria, there has been a surge of increased enthusiasm. Taking a continent-wide view, therefore, one can be optimistic.

The two key factors are the degree of encouragement provided by the national radio concern and the effectiveness of the publicity—and particularly of the magazine—produced by the national amateur organisation. In passing, I pay homage to the splendid contribution which has been made by M. Jean Thevenot, one of the Honorary Presidents of the FICS, who this year celebrates the 25th anniversary of his regular programme featuring the work of recording amateurs.

The Germans produce the most ambitious and lively magazine, entirely dependent on voluntary effort. The 'News and Views' production of the Federation of British Recordists, now edited by Raymond Orr from Glasgow, compares very well with the European average and conveys much of the genuine enthusiasm of the club-man and woman.

With the publication of a second issue this month, the FICS 'Bulletin' may be said to have established itself as a regular publication. Only its dependence upon voluntary effort prevents its appearance more frequently, but that will come later.

Book Reviews

BPI YEAR BOOK 1977 edited by Nigel Hunter. Illustrated. 224 pages. Price £2.95. Published by *The British Phonograph Industry Limited*, 33 Thurloe Place, London SW7 2HQ.

WHILE THIS IS ESSENTIALLY a trade production, I believe that every intelligent record buyer would end up with a keener insight into the world of recorded music by possessing this splendid compilation, which seems to cover every possible aspect of the subject. A specially lavish Centenary Edition, it naturally dwells a lot on record markets, analysing and discussing, with numerous statistical charts; but it also provides full surveys of records produced during the year and has excellent features on the history of the gramophone and developments in recording and playing records on disc and tape. I found it thoroughly absorbing and endlessly instructive and would strongly recommend it to trade and public alike.

Peter Gammond

THE BANG & OLUFSEN BOOK OF HI-FI by Dan Everard. 134 pages. Price £1.25. Published by *Woodhead-Faulkner Ltd.*, 8 Market Passage, Cambridge CB2 3PF.

IN THE PREFACE to this little book B&O make a disclaimer that as sponsors they have endeavoured to ensure that the contents in no way unfairly promote their own product philosophy. In other words, the views expressed on hi-fi are those of the author

without regard to the commercial considerations of Bang & Olufsen.

Fair enough, but are the contents of this latest addition to the growing library of hi-fi texts worthwhile? Aimed at the reader anxious to acquire enough knowledge to help him or her make the right decisions in choosing a hi-fi system at its modest price, the answer is 'Yes'.

With no references to B&O equipment or techniques, the author tackles in a readable manner selecting a hi-fi system, gives a passing reference to distortion, stereo, quadraphony (spelling preferred in text is quadrophony), compatibility (a couple of pages), leading on to the elements of a hi-fi system, including record, record player, radio tuner, amplifier, loudspeaker, and a separate chapter on the tape recorder. Setting-up and maintaining the audio system is covered in Chapters 8 and 9, followed by the nature of sound and recording in the closing chapters. A 21 page glossary closes the book.

Examining the text carefully, one finds some dubious advice—from suggesting the use of dry, clean velvet for record-cleaning to consulting the PRS about the 'legality of recording material', when the MCPS with its amateur licence would be more useful. Primitive surround-sound is described as 'ambio-phony', and none of the encoding/decoding systems in quadraphony get a mention, al-

though the author does explain that no universal standard has yet been agreed. Decibels are covered in Chapter 10, which deals with the nature of sound, a topic probably of limited use to the readers at whom this hi-fi treatment is aimed. Nevertheless, any hi-fi tyro would find a copy of this book helpful when buying his first system.

Donald Aldous

INTERNATIONAL MUSIC GUIDE '78 edited by Derek Elley. Illustrated. 304 pages. Price £3.25. Published by *The Tantivy Press*, 136-148 Tooley Street, London SE1 2TT.

THIS CONTINUES the excellent service of the initial publication of this new music guide, first issued last year, by surveying, in well selected manner, musical activities and organisations in all the leading musical countries of the world as well as our own. It provides a useful guide to the world's musical festivals and a brief guide to its opera houses and orchestras. Britain is then more fully dealt with by way of entries on music shops, magazines, books, music, etc, and sections on various non-classical fields. This is rounded off with excellent pieces on their selected 'Musicians of the Year'—this year St. Martin-in-the-Fields, Brendel, Ileana Cotrubas, James Levine and Miklós Rózsa. Without supplanting more comprehensive works, it gives sufficient information for the general music-lover and is most attractively produced.

Peter Gammond

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Linn Patents Appeal. After page 99 was passed for press (re Adrian Hopes' comment on a letter) we heard that the Appeal by Linn has been successful. Full report next month.

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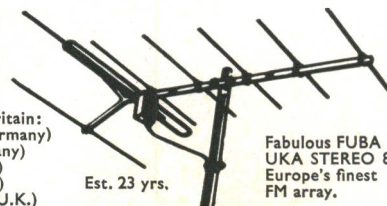
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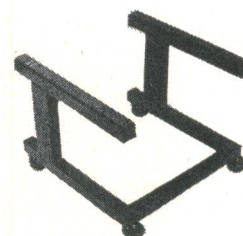
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FM Radio

Angus McKenzie

TWO particularly interesting readers' letters have arrived in the last month, from Mr. Craddock Randell and Mr. Dolby-Gray. Mr. Craddock Randell asks what factors, external to the tuner, can affect distortion on a domestic FM reception system. I have dealt with many points before but I have not detailed them together in 'FM Radio' in any one article. The most common distortion problem arises from multipath reception, and this results from two signals of fairly similar amplitude being received from the same station on the same frequency. One signal might be delayed behind the other by between 0.1 and 10 μ s, the difference in path length between, for example, a direct received signal and one bouncing off a nearby hill or obstacle. Multipath distortion is characterised by what can be heard as rather nasty distortion on or near peak modulation. The cure for this is to turn the aerial so that one or other of the received paths is in a null at the side of the aerial. This may well mean that the aerial is not pointing directly at the transmitting station. A more highly directional aerial can also be most helpful. In extreme cases, two Yagi arrays side by side can introduce side lobe nulls and can work well if a correct phasing harness is used. Firms such as J-Beam of Northampton can give advice here.

Sometimes, a 75 ohm aerial is connected to the receiver with a coaxial cable of the wrong impedance, perhaps 50 ohms, or alternatively is interconnected with the wrong input on the tuner e.g. 300 ohms. In extreme cases, and these are usually when signal strengths are relatively poor, a signal can be reflected back to the aerial from the receiver input if the input is not matched properly. The aerial would then reflect the same signal back down again, which would thus arrive a few tens of nanoseconds after the original signal. Very occasionally, I have known of problems here. You can sometimes tell if there is a likelihood of trouble in this respect if a weak signal changes in intensity, if you move the cable around near the back of the receiver. If the cable is correctly matched and if the receiver is well screened, the input signal should not change in signal to noise ratio or distortion. I have not known of this particular problem being experienced with fairly strong, or very strong, input signals, the reflected signal, if present, being so far below the first signal as to be virtually eliminated by the capture effect of the discriminator on a reasonable tuner. Sometimes, an aerial installation has been put up badly and plugs or connections have not been properly made. It's best for any joint to be soldered, but this is not always practical. A bad joint can rust or oxidise and this forms a partial diode which can then rectify RF signals very slightly. This rectification can then cause radio frequency intermodulation distortion,

which results in spurious carriers being noticeable on Band 2. In almost all cases, however, any RFIM problem would be likely to be caused by deficiencies in the tuner itself, or unusually high aerial input signals.

A final problem that occurs surprisingly frequently is that of hum, which results from an earth loop between the normal hi-fi equipment and an earth being connected to the aerial via another piece of equipment having its earth connected to the mains, and using an aerial on the same metal mast as the Band 2 aerial. The earth thus follows through the FM aerial coax to the aerial itself, and then via the mast to a television aerial and down to the set, and back to mains earth again. There have even been cases of masts touching a gutter, which is itself earthed to the ground, via a drainpipe, and this can also introduce hum. Such earth loops can also introduce radio frequency interference problems from any nearby commercial or amateur radio transmitters. Sometimes, the interference will not be noticed on the tuner, but will be most marked when gramophone records are being played. In this instance, the earth loop introduces RF interference into the RIAA inputs and pickup wiring, and in extreme cases shortwave transmissions, from Radio Moscow, for example, have become audible on the hi-fi setup. Disconnection of the FM antenna can eliminate or reduce the effect. The Post Office can provide 1:1 coaxial transformers for insertion in the aerial lead to offset this problem and, furthermore, many types of filter are also available from them to assist in the alleviation of radio frequency interference. If you have a problem of this nature which directly affects radio reception, you should fill in an interference form available at any post office.

Mr. Dolby-Gray, writing from Kent, is only seven miles away from Wrotham but wants to receive distant commercial radio stations on Band 2. He has tried many tuners, and reports that Radio 3 intermingled with Radio London comes up on, perhaps, 15 places on the dial. His problem is clearly that of RFIM and a solution here would be to have a variable attenuator in the aerial lead, together with a very highly directional aerial and also a tuner having the best possible RFIM performance. The performance in this respect of many receivers and tuners is detailed in *Hi-Fi Choice: Receivers* by myself, and *Hi-Fi Choice: Tuners* by Gordon King. Some highly priced tuners are not particularly good in this respect, while others are excellent. Selectivity is also important, but more in an RF front end sense than at IF for good RFIM rejection. Tuners such as the Revox B760 seem good, as well as some of the very best receivers including the Rotel 1603 and Pioneer 1250.

Perhaps the most important musical event on Radio 3 of April was the remarkable broadcast of Sergiu Celibidache's concert with the London Symphony Orchestra, relayed from the Royal Festival Hall. Celibidache's name, to most of us, is only a legend for he has made only a handful of recordings in his career. He admits to disliking studios intensely, and he does not even like broadcasting. As far as I can remember, the RFH relay is the only live concert of his trans-

mitted by the BBC in at least 15 years. We have heard, though, the odd EBU tape and there can be no doubt that this legendary conductor, famous in his country, but hardly known elsewhere, is one of the greatest in the world. It is a long time since I have heard applause so sincere and prolonged, and it was continuing long after the transmission was returned to Broadcasting House continuity. Celibidache has a particular 'thing' about orchestral tuning up, and the Deputy Leader was requested to check every section of the orchestra in situ and in front of the audience. Although perhaps embarrassing for the LSO, the result was stupendous and the orchestra applauded the conductor as much as the audience did. The sound quality itself was better than average from the hall, and I was pleased that it was more natural than usual and with less added reverberation. The stereo seemed very clean, although the strings were rather wide. At times, in climaxes, the peaks had so much energy at high frequencies that I could distinctly hear limiters in action, but the dynamic range transmitted was exceptionally wide. I do not want to seem unappreciative, but perhaps the peaks could have been kept down a bit to preserve their realism, and thus the dynamic range would have been slightly degraded, but still excellent. His programme included Verdi's *La forza del destino* overture, Hindemith's *Mathis der Maler* symphony and finally a selection from Prokofiev's *Romeo and Juliet* Ballet. The LSO were playing at their best and Celibidache's name certainly goes down in history, for me, and I suggest readers who are interested should keep a watch out in case his name crops up unexpectedly.

Liszt's oratorio *Christus* is perhaps as legendary a work as Celibidache a conductor, and fortunately in October last year the BBC recorded the first complete UK performance of the work in Westminster Cathedral at one of the Liszt Festival occasions. Brian Wright conducted the Royal Philharmonic Orchestra and several choirs, and the performance, whilst being technically complete, was in fact the edited version that Liszt himself prepared, with around 850 bars missing, cut from the original over-long, 3 hour work. What a glorious work it is, and how surprising that it has not been given a complete performance before in the UK. A few readers might well know the work, however, since it is available on a superb Hungarian 'Qualiton' 3-record box set as an import. The sound from the Cathedral was captured magnificently by the BBC engineers, and I was surprised to find that whilst the Cathedral's immense reverberation was very marked throughout, the orchestral sound balance was remarkably clear and the important woodwind parts were not swallowed up completely by the acoustic. The soloists came over clearly, as did the chorus, and the balance preserved the correct dynamic ratio between all the performers. Fortunately, the soloists were not brought too far forward but some intrusive hiss was noticeable in very quiet passages, which was a pity. I hope that the BBC will be able to repeat this momentous broadcast, which must have given many listeners much pleasure, as it did me. My tape of the broadcast will be treasured for a long time.

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HFN 6



Photo: Trevor Attewell

MMUSIC FOR ORGAN' in this issue (page 112) attempts to introduce the pleasures of the organ world to those unfamiliar with them, but it is pointed out that home listening can be disappointing with many ordinary loudspeakers which cannot reproduce pedal notes at realistic levels. The organ is not alone in requiring high acoustic powers at low frequencies—much heavy rock music makes similar demands, and so does the effective reproduction of a few orchestral instruments, notably the bass drum—but the organ is unique in its need for steadily increasing outputs down to 16.35 Hz, or even lower in some rare cases.

Many loudspeakers claim a 'response' down to 30 or 40 Hz, but only a limited number have a truly flat response down to these frequencies. With the majority we may be able to hear very low notes, but they will lack the true 'weight' that is felt almost as much as heard and which makes all the difference to one's enjoyment. The loudspeaker designer's problem is to find a compromise between bass performance on the one hand, and cost and domestic acceptability on the other. It is a simple fact of physics that high acoustic levels at low frequencies require the shifting of a lot of air, and this is only achieved at reasonable efficiency with a relatively large enclosure. Two such enclosures (for stereo) tend to dominate the average living room, and may be incompatible with domestic harmony.

To obtain our bass while keeping the divorce rate down and the bank manager miserable (nowadays they *like* to see the interest on large debts rolling in!), we can make use of two ordinary loudspeakers,

plus a special unit designed to handle only the bass. Although strictly speaking two bass units are desirable, it is feasible to use only one if it is confined to a suitably low frequency range in which there is minimal stereo information. If it is not to be just another massive (and therefore unacceptable) box, then it must not look like a loudspeaker, and it should also serve as a useful piece of furniture. Such devices have recently attracted the attention of several manufacturers, and have acquired the horrible generic name 'add-on sub-woofer'. In April 1969 we published a DIY design called the 'Basset', a low-frequency loudspeaker in which none of the units was visible, and which was designed to provide seating for up to three people, particularly useful as a window seat, especially in a bay. Quite a lot were built—some by an enterprising small firm (see cover of October 1970 issue), who even exported models in *solid* teak (those were the days!) to the USA. One macabre example was made in pine, with brass handles! We still get queries from readers who have come across the original design and want to know whether suitable speaker units are still available. So it seems a reasonable idea to re-issue the design, incorporating some of the results of experience gained over nearly ten years

of use. We shall start by looking at the general philosophy, the principles of operation and the methods for driving and positioning the Basset, leaving the details of carpentry and electronics until the second part of the article.

The basic enclosure design is very simple, being based on a well-known early patent by Voigt. Fig. 1(a) shows a section through a simple rectangular pipe, closed at one end, of length l . Such a pipe will be naturally resonant at a frequency f given by $f = V/[4(l + e)]$, where V is the velocity of sound in air (approximately 344 m/s at 20°C), and e is an end correction which depends on the sectional shape of the pipe and other factors, being about 0.3 d for a square pipe of side d . Such a pipe can be used as a loudspeaker enclosure, but a plain column of this kind would be objectionably resonant at its fundamental frequency and at higher harmonics. Further resonances would arise from the parallel walls.

These problems can be tamed if the pipe is tapered from a small, or even zero dimension at one end to a maximum at the other—the taper need be only in one plane, as shown in fig. 1(b). Such tapering raises the fundamental frequency, but this effect is minimised by partly blocking the open mouth of the pipe. Too much reduction in mouth area would obstruct radiation from

the Basset

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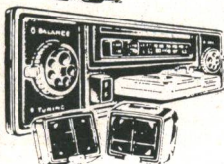
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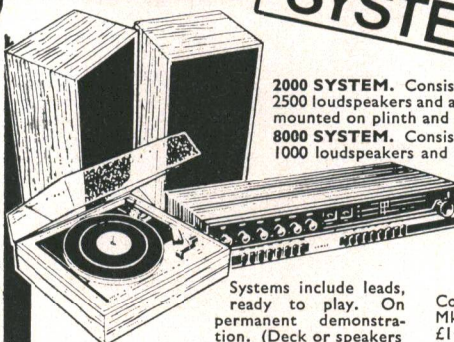
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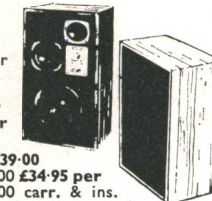


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the mouth, and the optimum open area is about 40% of the total area immediately behind the mouth. The drive units are coupled into the pipe in a region about one third of the distance from the closed end of the column, a position chosen to reduce harmonic excitation as much as possible.

Fig. 1(c) shows how these factors are combined within an enclosure of overall rectangular shape by the use of a sloping partition between its inner sides. This gives the required taper and also makes the structure very much more rigid. The drive units and the mouth are all located under the bottom of the enclosure, where they cannot be seen. Naturally, there must be a space between the bottom and the floor to let the noise out, and this is provided by four short legs. The space can be small enough to exclude most domestic animals, including the younger, inquisitive human ones.

The original Basset used four 8 in. drive units, each of 16 ohms nominal impedance, paralleled in pairs, with each pair driven from one half of a stereo amplifier. The left and right channel input signals were either mixed and fed in parallel to both amplifier inputs, or fed separately through the two amplifier sections and mixed acoustically in the Basset. With the increasing use of source separation in multi-track recordings, it is not uncommon to find the bass unevenly divided between channels, and electrical mixing before the Basset amplifier is to be preferred, reducing the chance of overloading one speaker pair while the other has capacity to spare.

A number of readers have enquired whether two larger units, such as KEF B139s, could be used. No doubt they could, provided one is careful to allow enough space on the mounting panel, but

it is cheaper and just as effective to use the current Elac replacements (Type 8NC/185), which are similar to the originals but have a larger total flux. Samples of these were kindly made available by the Company, and tests show that they are entirely suitable. In fact, past experience indicates that a number of smaller units, with mutual acoustic loading, seem to give a slightly 'tighter' bass than fewer but larger ones.

Regarding the necessary crossover between the Basset and the rest of the system, it has been found that the original crossover frequency was too high and the asymptotic slope too low. As a result, appreciable levels of midrange signals were being radiated from the Basset, to the detriment of the stereo image of the complete system. The empirical cure involved dropping the crossover frequency to 100 Hz, with a slope of 12 dB per octave. Slopes of 18 dB per octave were also tried, but were not liked subjectively. The results in any particular case will undoubtedly depend to some extent on the characteristics of the midrange loudspeakers, but 12 dB per octave is likely to be a fair compromise in most instances.

The phase response of the filters has been ignored as being of little practical significance in this kind of application. Fig. 2 is a block diagram of the overall arrangement, in which left and right channels are first split between the Basset and the rest of the system by the filters, the two bass outputs

being combined electrically, by simple addition, for the reason already given.

It is tempting to design the active filters around integrated amplifiers, but the problem here is that those ICs that are easy to use tend to have a poor frequency response and low slew rate, while the higher frequency ones are apt to oscillate unless one is suitably fussy about layout, power supply decoupling and the like, which could cause problems for anyone not too familiar with their habits! Instead, a discrete component design was adopted, using emitter-followers as the active elements. The basic circuits for a high-pass and a low-pass filter of this type are shown in figs. 3(a) and 3(b) respectively.

Another temptation is to try to obtain the power supply for the filter unit from one of the available amplifiers, but it is one that should be strongly resisted! There are many reasons—availability of a suitable voltage and current capacity, the finding of a take-off point, the possibility of unwanted feedback around the filter and amplifier, and even the certain invalidating of somebody's guarantee! Batteries might be used, but I dislike these on the grounds that switching them on and off is inconvenient, and they have a nasty habit of leaking corrosive goo which wrecks everything it touches.

Consequently, an independent mains supply is suggested. Most modern amplifiers have switched mains output sockets to provide simultaneous powering

FIG.1 DEVELOPMENT OF BASSET FROM SIMPLE PIPE

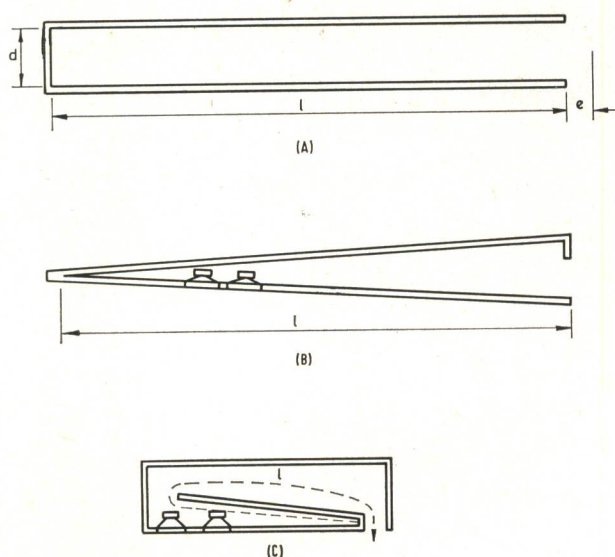


FIG.2 BLOCK DIAGRAM OF ARRANGEMENT

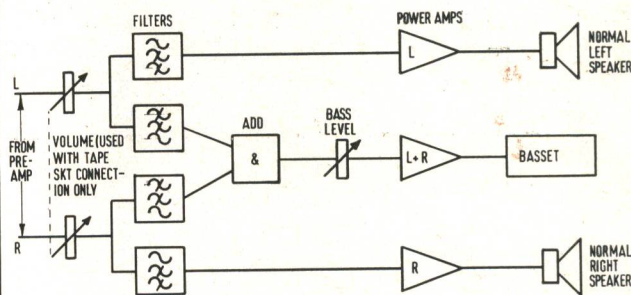
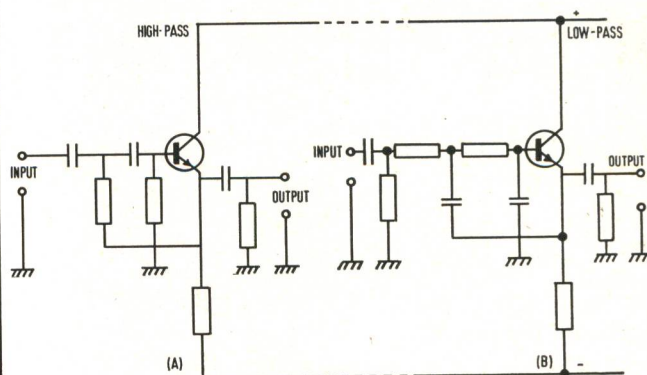


FIG.3 BASIC FILTER CIRCUITS





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for ancillary equipment, and it will nearly always be possible to derive the few watts needed for the crossover from one of these outlets.

A further question of some importance is how to insert the active crossover into an existing system. Owners of Quad equipment, or any other type having separate pre- and main amplifiers, have no problem, since it is simple to introduce the extra circuit between these components. Similarly, some integrated amplifiers have a 'pre-out-main-in' switch, or link, with the appropriate sockets, to allow the insertion of external circuitry. Failing either of these, it will often be possible to make use of a tape output/monitor socket. In many cases these provide a signal to a tape recorder from the preamplifier, and also allow an output from the tape recorder, where this is simultaneously available, to be reinserted into the amplifier for monitoring purposes. The necessary control settings must be checked against the instruction manual for the amplifier, to make quite sure that the set-up is doing what you expect and that there is no possibility of unpleasant, and possibly damaging, 'howl-round' conditions occurring. In most cases the amplifier function switch will be set to the source in use (tuner, etc) and the tape switch to 'play'. When actually using a tape recorder, this will have to be inserted in the loop, and must come directly after the 'tape output' and before the crossover.

The snag with this whole arrangement is that the 'tape output'—that is, the signal to be recorded—is taken from a point in the circuit before the volume and tone controls, which will therefore work only on the signals fed to the main system, and not on the Basset, the feed to which has been separated out in the crossover. This does not matter much in the case of the tone controls, which will work normally on everything except the Basset output, which has its own independent control. Volume is a different kettle of fish—it is very irritating to have to fiddle with two volume controls at the same time. One solution is to pre-set the normal volume control to the maximum level likely to be needed, based on past experience. A single master control is then inserted in the loop, after the tape recorder, if used, but before the crossover. To avoid any risk of shattered nerves from the inadvertent movement of either the original volume control or the tape switch, it might be a wise precaution to remove the knobs from both after setting up.

It is regretted that it will not be possible to answer queries about modifications to amplifiers. The number of amplifiers for which I have no instruction manuals, circuit or layout diagrams is not far short of the total number made, and who needs guesswork?

In the rare cases where no insertion facilities are available it will be tempting to feed the whole signal into the normal loudspeakers, and to supplement the bass by taking the output from a tape (output only) socket, or even the attenuated output from the main amplifier, through a low-pass filter and power amplifier to the

Basset. Not a good idea, in general, because the extreme bass signals give rise to large cone excursions in normal loudspeakers, and this can result in a nasty combination of non-linearity and Doppler effect. In some cases 'doubling' occurs, the cone vibrating at twice the frequency of the high-amplitude bass note. Practical tests show that most loudspeakers, including some very expensive ones, sound much cleaner if they are rolled off by external means before their own falling bass response takes control.

The use of a separate bass unit does presuppose that enough bass is available to drive it. Not much can be done about inadequate source material, except to avoid it whenever possible; but one must, at least, ensure that the complete system up to the crossover has a flat response down to about 20 Hz. A rapid drop below that figure is useful to minimise rumble, unfortunately present on many recordings even if the turntable is guiltless.

Before building your Basset it is worth considering how it can be sited in relation to the main units, as well as other furniture. Many prospective buyers of bass units have the impression that their position in the room is purely a matter of convenience, but unfortunately this is not true. Any sound in which the fundamental is reproduced by such a unit is likely to be accompanied by harmonics of which some, at least, will be radiated mainly from the normal speakers.

If these components of the sound arrive at your ears at times differing by more than a few milliseconds, audible degradation is probable. In extreme cases, the sound will appear to originate in the nearer source—this is the well-known Haas effect. Sound takes about 3 ms to travel one metre in air at normal temperature. If the difference in distance between two or more sources and your ears differs by a distance significantly greater than this, sound quality and image localisation will suffer.

Another restriction is that room corners should be avoided because room resonances are more strongly excited, giving a 'boomy' effect, though the main speakers may be placed a little nearer the corners when they are rolled-off in the bass than when they are used full-range. The Basset can be dimensioned to assist in filling hollows in the room response, which it does best when near one of the shorter walls and about a metre from the corner—this will be further discussed in Part 2 of this article.

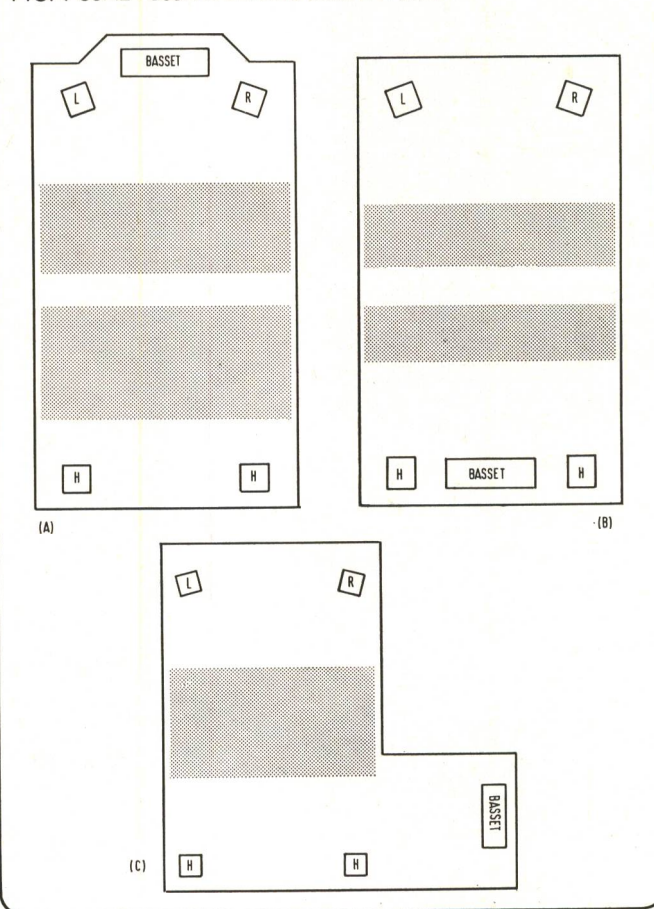
One should also consider the likelihood of using Hafler type arrangements, which need an additional two speakers at the rear. Any application to Quadraphonic or Ambisonic arrangements is best deferred until software is available for some generally agreed system.

Some possible arrangements are shown in fig. 4, with the probable best listening areas shown shaded, and rear speaker positions marked 'H'. With Hafler, it is

practicable to sit quite close to the rear speakers if their level is suitably reduced. The centre of a room is often poor, due to the presence of standing-wave nulls. It is clear that a layout similar to (a) offers the maximum listening flexibility.

Full constructional details for both the Basset and the necessary active crossovers will be given in the second part of this article. ●

FIG. 4 SOME POSSIBLE LAYOUTS USING A BASSET

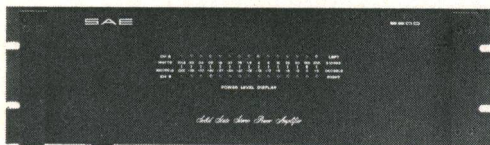


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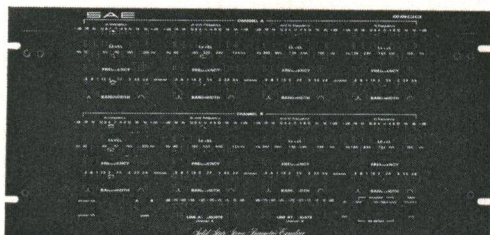
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ASSESSING LOUDSPEAKERS

Paul Messenger spills a few valuable beans
in connection with the latest 'Hi-Fi Choice' loudspeaker
reviewing project.

I N my days as a member of *HFN/RR* staff I arranged some brief articles summarising the general conclusions of various *Hi-Fi Choice* projects, when publishing schedules permitted. We felt that the results of these large-scale undertakings were interesting in their own right, and deserved wide dissemination—even though we naturally had to ensure that we didn't give away too much and thus prejudice sales of the publication! I am pleased that the Editor has seen fit to carry on the tradition, even though my writing the piece may appear to be rather incestuous. However, I have been closely involved in the loudspeaker project for most of its duration, and should make an adequate substitute for the reviewer Martin Colloms, who is heartily sick of writing about loudspeakers at this moment!

I won't dwell at any length on the reviewing methods, which are exhaustively specified and qualified in the book, or indeed on any of the political aspects of the project, which have and are being discussed in the pages of *Wireless World*. Suffice it to say that the project involved extensive laboratory measurement work and listening tests on some sixty models, ranging in price from £80 to £1500 per pair, all models being fundamentally conventional dynamic loudspeakers. Covering such a significant slice of the market at one time and under the same conditions gives one a unique opportunity to observe trends and patterns and investigate particular aspects of design and performance.

One recent trend in loudspeaker design has been the introduction of 'phase-compensated' designs. Although the practical desirability of coherent-phase loudspeakers is still a matter for discussion and argument, proponents normally advance the claim that incorporation of controlled phase characteristics enhances the stereo imaging properties of the design. The reviewed loudspeakers included some twelve models which claimed to include a degree of phase-compensation, and this was a golden opportunity to compare their blind-test results with more conventional designs, and to this end we used some original master tapes of the highest quality, which had been made using crossed-pair microphone techniques and which were correctly azimuthed on replay. An additional benefit was the presence of the engineer/producer, who sat in the central front row position of the listening panel.

The results were rather disappointing, and only one of these designs gave exceptional results under our listening conditions. Indeed, in the context of the group as a whole the phase-compensated designs

performed rather less well on average, on stereo imaging, than more conventional designs. If one examined the performance of those models which were found to give particularly good imaging, common factors could be seen which had little to do with phase, but which were more concerned with traditional or 'classical' design parameters. These included low coloration and distortion, a uniform balanced frequency response over a reasonably wide forward-radiating 'window', and excellent integration and matching of drive units for both phase and amplitude.

While many conventional speakers fulfilled these criteria, and gave good stereo image quality, many of the phase-compensated designs were actually marked down on image quality, and analysis of their results frequently showed shortcomings in some of the above areas, most particularly in regard to perceived colorations and peculiarities of frequency balance and integration. It is perhaps not unrealistic to suggest that phase-compensation in a design may produce some audible benefits under the right conditions, but it appears that the benefits are unlikely to be realised if other aspects of the design do not approach the highest conventional standards—and it is in this area that the majority of the phase-compensated designs seem to fall down.

It is undoubtedly difficult to produce a high quality stereo image, and its coherence can easily be destroyed by a number of mechanisms. Delayed resonances, for example, are likely to obscure or mix up the low-level ambient information that is present in a high quality concert-hall recording, while a rising frequency response will tend to exaggerate the higher harmonics of, say, a violin recording, emphasising detail and distorting perspectives, giving an exaggeratedly 'close' sound.

Other factors also influence the quality of the stereo image, and these include the integration of the sound from both speakers at the listening position. This is undoubtedly helped by accurate matching of phase and amplitude in the two speakers themselves, and seems difficult to achieve when the drive units are laterally disposed on the speaker baffle. Carefully designed systems with lateral asymmetry, but assembled in mirror-imaged pairs, can give results as good as many systems with vertical-in-line baffle arrays. However, they can usually only accomplish this over a restricted listening area. Allied to this is the whole area of drive unit integration, and it was generally found that the speakers with high-slope crossovers and consequently less drive-unit overlap gave more precise imaging.

A final factor observed, but not easy to explain, is that the narrower enclosures gave the best source location. Most of the smallest enclosures were consistently marked high, and at our listening distance of 2½–3 m, enclosures that were one foot wide or less seemed to give the best results. The broader baffled systems tended to sound more spacious, which was often liked on multi-miked recordings, but they tended to blur and expand the sound of single instruments and were generally considered less accurate.

Speakers that demonstrated a fine frequency response did not necessarily sound good; but, conversely, most of those that scored well on listening tests did show a fairly flat response, well maintained off-axis. In other words, the uniformity of response in the forward radiating angle tended to be good. Measured non-linear distortion seemed to be of rather less importance; although poor results were frequently audible, this was not necessarily the case and the distortion tests did not really enable fine discrimination to be made between the better designs or correlate particularly well with listening results. But they were more useful in pointing up areas for further investigation.

Sensitivity *per se* did not appear to have much bearing on sound quality, as amplifiers with adequate reserve power were always used for the listening tests. If anything, lower efficiency models received rather more recommendations, usually because coloration levels tended to be lower. However, sensitivity is likely to be fairly important to a purchaser because of the need to provide sufficient amplifier power to achieve desired sound levels. The range of sensitivities in the group was from 82 dB/watt to 94 dB/watt, so an inefficient design may need to be used with an amplifier many times more powerful than that required for a more efficient model. Indeed, there were examples of speakers from different manufacturers which had similar price and performance, yet a sensitivity difference of several decibels.

Power handling and maximum output also revealed surprising differences in apparently similar designs, and no definite link could be established between sensitivity and maximum tolerable loudness, some small designs unexpectedly achieving high levels and accepting the full output of a 500 watt amplifier on peaks with music signal! This obviously gives further weight to the poorly appreciated fact that one of the easiest ways to damage a loudspeaker is to drive it hard with an inadequate amplifier, as amp clipping itself is likely to do the damage. When sufficient power is available,

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Letters...

... about your kind of sound

From: F. D. Mills-Thomas, Long Orchard, 31 The Park, Gt. Bookham, Surrey

Dear Sir, Can I be the only person who finds all these arguments over subjective v. objective tests, musicality, etc, totally pointless in the context of listening to music?

I have reasonably good equipment which does not produce any obviously horrid noises in addition to the music. It does *not* transport me to the Albert Hall (there is no way that any equipment can reproduce the 'occasion' of a live concert) but it does sound well to me and I like it because it is what I am used to.

These last few words indicate the key to solving the problem of how to test. If you listen to equipment which has been shown by objective tests to have no grave inherent shortcomings, and you like what you hear, then buy it. In a very short time the sound it makes will be *your kind of sound* and if other people prefer *their* sound that is their privilege!

Incidentally, I do not stick things on to nor remove bits of my Thorens, SME, etc, because I happen to believe that manufacturers who spend large sums of money on research and development are better able to perfect their products than I am.

Yours faithfully

... about an alleged anti-Linn bias

From: Russ Andrews, 16 Milton Grove, New Milton, Hants

Dear Sir, With respect to your recent article 'The Linn/Ariston/Robertson Affair' (April, p. 71), I feel that you have grossly misrepresented the Hearing Officer's decision and, by serious omission and careful selection of material, gave an unfavourable impression of the Linn Products' position. The whole article appears to me to be grossly unfair. For instance, with respect to Mr. Ivor Tiefenbrun's alleged tearful confession at Harrogate, I was one of the people present at that encounter and I can positively deny the validity of Mr. Robertson's account. It did bear a resemblance to an encounter in the bar at the Post House Hotel where Mr. Robertson behaved in exactly the fashion that he attributed to Mr. Tiefenbrun. On both occasions there were independent witnesses who will verify my account and, in the recent patent hearing, Mr. Robertson's witness could not corroborate his story.

People who know both parties in this affair will surely consider your article factually inaccurate, unobjective and positively unfair to Linn Products. It questions the integrity and objectivity of both the author and the magazine. There are many other inaccurate statements and assumptions in the article. For example, an Appeal against the Hearing Officer's decision has been lodged and is due to be heard in April.

I must comment also on your snide remarks about Mr. Jack Tiefenbrun's inability to travel

to London. He has been a sick man for several years and had recently suffered a stroke. He was then and is still unable to travel any great distance.

The article purports to be an accurate digest of the Patent Office Decision No. 4 1978, when in fact it is both biased and unpleasantly slanted.

Yours faithfully

Adrian Hope comments: I checked twice before publication with the Department of Trade, who confirmed that no Appeal had been lodged, but an Appeal was filed subsequently. I have promised Ivor Tiefenbrun that I would attend the hearing if he told me the appointed day, but have heard nothing further. As for my objectivity, I tried sincerely to be impartial and can only recommend that readers refer to the Decision (as explained in the article) and judge my efforts for themselves.

[See note on page 87 — Ed.]

... about pancake mats

From: Maurice Taggart, 23 Macroom Gardens, Carrickfergus, Co. Antrim, Northern Ireland

Dear Sir, As my contribution to the fascinating new field of turntable mat technology, I would like to share with other enthusiasts my discovery that a large pancake, approximately 12 inches (30 cm) in diameter, appears to meet all the parameters expounded in Mr. Jean Hiraga's interesting article in April issue.

I made this discovery quite by accident, while sampling some of my wife's culinary masterpieces. The following recipe produces a pancake of a delicate texture which appears to be just about optimum for controlling the most common modes of resonance, and has produced superb results on my own turntable. By varying the amount of flour in this recipe, HF resonances may be controlled fairly selectively, to suit individual taste (no pun intended):

4 oz plain flour

½ pint milk

1 egg

Salt to flavour

The mats are incidentally quite delicious sprinkled with caster sugar and lemon juice, and those rejects considered unsuitable for audio purposes may be consumed with relish.

Yours faithfully

... about sausage mats

From: I. M. Pottytoo, Patient 6014, 'Fidelity' Ward, Ear Hospital, Romford, Essex

Dear Sir, I have read with pleasure your recent article on improving reproduction by experimenting with mats, and I would like to tell you of my own experience. In fact I insist on it, as my psychiatrist refuses to see me any more.

After several experiments with various forms of turntable mat, I found that eight *uncooked* pork sausages, placed in a circle on the turntable, with the record on top, produced a great improvement in 'musicality'.

Obviously this requires adjustment to the height of the pickup arm, but this can be minimised by squashing the sausages. I do this by placing them in a straight line on the garden path and running the garden roller over them.

By the way, beef sausages seem to 'deadens' the sound; I rang my butcher about this and he promised to look into it when he gets time.

Yours faithfully

... about 'iron curtain' wavebands

From: Dr. Igor Hajek, Department of Central and South-Eastern European Studies, Lonsdale College, University of Lancaster, LA1 4YN

Dear Sir, In your April issue Donald Aldous reports that 'a special version of the FM3 tuner is made for the Japanese (and by coincidence Russian) wavebands'.

It would seem that a tuner made for the Japanese market could at best only overlap a part of the OIRT band which is used for FM radio in the Soviet Union, Eastern Europe and China. While the Japanese FM frequencies extend from 76 to 90 MHz, the OIRT FM band ranges from 65 to 73 MHz.

It is useful to remind ourselves occasionally that contrary to general belief, the use of Band 2 for FM broadcasting is not universal. This provides for some variety in countries where FM signals from abroad can easily be received. In Hungary and Czechoslovakia, for instance, tuners and even FM car radios are equipped to receive both the OIRT (65-73 MHz) and the CCIR (88-104 MHz) FM broadcast bands.

Indeed, in summer, due to Sporadic E propagation, stations in the former band can often be heard in this country, too.

Yours faithfully

LOUDSPEAKER ASSESSMENT

transients remain sharp and of short duration, and so pass less total energy into the drive-units.

So the project is complete, and by the time this is published will have appeared and no doubt the arguments will have started! There are many qualifications that need to be made when attempting to review loudspeakers, and it is not possible for such a book to be all things to all men. The generalisations I have made here are precisely that, and do not constitute a new manual for loudspeaker design! They represent the findings and correlations of an exhaustive series of measurements and controlled 'blind' listening sessions. As such, they inevitably reflect the perceptions and expectations of a limited group of people and a limited range of test conditions. But the fact that a number of established prejudices have been confirmed under 'blind' conditions indicates that the results are likely to be fairly accurate in representing typical tastes, while the fact that there are a number of surprises should help to break down the prejudice that many people hold: that there is one and only one 'right' way of designing a loudspeaker.

In absolute terms the live-vs-recorded sessions showed that loudspeakers still have a long way to go, but nevertheless it was heartening that many of them cope very well with some requirements, and that there were few designs which didn't perform reasonably well in some area or another. ●

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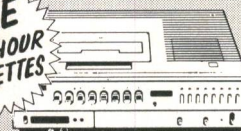
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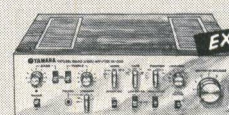
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Soundings

Donald Aldous

TOWARDS the end of March the British record companies won a victory in the Appeal Court against 'bootleggers' who have been making large sums of money by selling tapes recorded clandestinely at 'pop' concerts.

By a 2-1 majority, the Appeal Court ruled that 30 record companies and 'pop' musicians were entitled to obtain a 'seize and search' order against a man described as the 'evil genius' behind these illicit recordings. Armed with this order the record companies can now go to any hideout, make a search, and take away any secret or illegal recordings.

The Master of the Rolls, Lord Denning, explained that 'bootleggers' had to be distinguished from 'pirates' in the record trade. The latter category did not produce 'live' performances on record, but copied existing recordings onto various recorded software to sell at a very low price. It was very difficult to catch them, but they had been defeated by the enterprise of Mr. Hugh Laddie, for the record companies, who had persuaded the judges to issue an order on the particular shopkeeper in question before the writ was served. This meant that before the shopkeeper could dispose of or destroy his 'pirated' stock, he had to disclose all his relevant material 'frozen' by the order.

Ensuing from all this action was the question asked by the record industry—could such an order be made against 'bootleggers'? In law a 'pirate' was guilty of a civil offence by infringing copyright of recording companies, but a 'bootlegger' was only guilty of a crime and not a civil wrong. Mr. Laddie's view was that the Courts had jurisdiction to grant injunctions against 'bootleggers' as they had against 'pirates'.

So much for our excursion into the field of jurisprudence. Following on from this legal action, recent market research figures from the BPI (British Phonographic Industry) reveal an astonishing growth in the estimated number of 'home' recordings which, according to this source, have jumped from 112.6 millions in 1973 to 224.4 million in 1977.

Tape manufacturers are delighted, of course, but such gramophone industry spokesmen as Chairman Laurie Krieger (Gramophone Record Retailers' Committee of the Music Trades Association) believe that this remarkable increase in the sales of blank tape (especially cassettes) for illegal domestic recording (which includes copying LPs on loan from libraries, and recording 'off-air' record recitals, etc) is responsible for the future bleak outlook of many independent record dealers, linked to the discounting war, accelerated since the abolition of RPM. There is an amateur recording licence available, of course, from the MCPS, but it has strictly defined permissions.

The ramifications of the illegal record producers are worldwide, with their activities organised into an industry that duplicates material on a vast scale, swamping markets in the Middle East and Africa, and trying to

extend into even wider territories. The importance of this problem can be seen from the fact that Interpol has advised European governments to institute suitable protective legislation.

A recent survey undertaken by SNEPA (National Syndicate of Phonographic and Audio Visual Publishing) revealed that of the 20 million blank cassettes sold in France during 1976, it is estimated that 14 million were used to tape music from discs.

The world's record industry is so disturbed by this problem that the imposition of a tax or levy on blank cassettes (or on the cost of tape recorders as sold to the public) might be a possible solution. Curiously, in France, there is already a campaign to get its VAT figure reduced from 33½ per cent to the UK's 8%, West Germany's 11%, Italy's 12%, and 16% in the Netherlands. In France, incidentally, books are taxed at only 7% and pornography has the same VAT rate as records!

HERE ends my sortie into the realms of economics and politics, but thinking about these problems has triggered off a reappraisal of the tape machine market. No self-respecting hi-fi enthusiast in those early days of cassette equipment some 14 years ago would let it be known that he owned or used the low-fi cassette medium. Immodestly, however, I can claim that since I heard the system in Eindhoven before its official launch, I always believed it had a tremendous potential market for home entertainment—but I did not appreciate how the technical improvements to overcome its limitations would make the medium's fidelity acceptable to so many audiophiles. Of course, the mass domestic market today for 'home' recording is dominated by cassettes, allied to the expanding release of repertoire by the major companies simultaneously in disc and tape formats.

Having presented my brief for the tape cassette, I must say that my recent experiences at tape clubs and with highly critical audiophiles all point to a sustained, even a growing interest in open-reel tape recorders. The editing possibilities with reel-to-reel machines have obvious advantages for the serious tape recordist, unavailable to the cassette user other than by transferring from machine to machine with attendant noise intrusion. Of course, I know that there are de luxe cassette decks and Elcaset units capable of hi-fi results, but even without that standard of sound quality, many recorded music devotees prefer to listen to the pre-recorded cassette versions of many recent LP issues, if only to be spared the clicks and plops of so many of today's British pressings—but that's another story.

Reel-to-reel tape machines are often regarded as necessarily being large and very expensive, but the new Pioneer RT-707 deck is noticeably more compact than the typical

open-reel design. Its panel is only 19 by 9 inches and can be mounted in a standard EIA equipment rack. Its depth is about 14 in. Available from Shiro (UK) Ltd, its RRP is £448.73 plus VAT.

This RT-707 model is a four-track stereo unit, operating at 3¾ i/s (9.5 cm/sec) and 7½ i/s (19 cm/sec). As well as having a three-head format, it has a second replay head for use in the reverse direction of tape movement. Although it records only in the usual forward direction, by the simple addition of a length of conducting tape to the coated side of the magnetic tape, it will automatically reverse or it can be reversed at any moment by pressing a button on the front panel. This is not a technical review, but I will mention that the performance at 7½ i/s is really high quality, and its low-profile physical appearance attractive and convenient.

The second machine needs no recommendation from me—the new Revox B77, the successor to the A77 model, has the same two speeds as the Pioneer RT-707, and any user of the earlier and larger Revox A700 design from Studer will see its styling and colouring origins. A full review of this splendid machine appears later in this issue.

THIS month I have concentrated on records and recording, which leads me neatly to a couple of ways of defining records that intrigue me. Conductor (and onetime fellow horn player with Dennis Brain) Norman del Mar considers that some of the best 78s—he cherishes a Toscanini disc recorded as a one-off master—represent a 'live' performance with all that means, but today's taped and edited masters are merely blueprint sketches for a performance. Sergiu Celibidache, eccentric and outstanding conductor that he is demanding many rehearsals of an orchestra, regards gramophone records—according to Edward Greenfield to whom my thanks—as 'like going to bed with a picture of Brigitte Bardot'. It makes you think!



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MUSIC ON RECORD

HUMMEL 1778-1837



Peter Branscombe (no, that's Hummel on the left) considers the music of a neglected 'past master.' Are we right to dismiss him?

ON 14 November this year we celebrate the 200th birthday of Johann Nepomuk Hummel, Mozart's most favoured pupil and one of the leading pianist-composers of early Romanticism. In his lifetime he was considered one of the great: as a boy his concert-tours through Europe were triumphs; in later life he was one of the most admired of piano virtuosos; Haydn successfully recommended him to the Esterházy to be his own successor as director of music; Schubert would have dedicated his last three piano sonatas to him if death had not intervened; and Goethe, who late in his life knew Hummel well, saw fit to compare him to Napoleon. Yet History has treated Hummel much less kindly, and we have had to wait until the era of the LP to have the chance of getting to know at last a selection from his large output.

The facts of Hummel's life are soon told. Born at Pressburg (Pozsony, Bratislava), where his father was director of the Military Music School and conductor of the municipal theatre, he early showed such promise as a pianist that when he was taken to see and play to Mozart, the latter at once agreed to

take the boy into his house, where he probably stayed from the winter of 1785-86 until the autumn of 1787—roughly from *Der Schauspieldirektor* to *Figaro*. By 1789 he was appearing as a piano soloist with great success, and his father took him off on an extended concert tour that brought him to many towns in Britain (including lengthy stays in Edinburgh and London). When Hummel returned to Vienna in 1793 he studied under Haydn and Albrechtsberger (as Beethoven did at much the same time). A further concert tour to Russia supervened before in 1804 Hummel took up the post vacated by the ageing Haydn as Kapellmeister to Prince Esterházy at Eisenstadt (the inscription on the autograph of Hummel's Trumpet Concerto, dated 8 December 1803, suggests that he was in post rather earlier). From 1811 to 1816 Hummel was in Vienna, without a post but giving concerts, composing for the stage, and teaching (his pupils include Czerny, Meyerbeer, Thalberg, Hiller and Benedict).

In 1816 he became Kapellmeister at Stuttgart, and from 1819 until his death on 17 October 1837 he was Kapellmeister at Weimar

—the conditions of his appointment allowed him three months' absence each year for tours, which saw further successes in Russia and England. He also found time during his Weimar years to write the extensive and once much-used *Pianoforte School* (published in 1828), which allows us to check the validity of contemporary comments (and more often of later-recalled anecdotes) about Hummel's pianism—no idle matter, since he is perhaps the most direct link between Mozart and Czerny, Chopin and other mid-century lions of the keyboard.

The British should feel a particular sympathy with Hummel, not only because in the early 1790s he was a darling of London audiences, or because he was one of the distinguished group enlisted by George Thomson to harmonize Scottish folksongs—his very first published work opens with six variations on 'The Plough Boy', and his opus 2 consists of variations on 'The Lass of Richmond Hill' and 'Jem of Aberdeen'. Solo piano music figures large in his output; on the whole the variations are of less interest than the sonatas

overleaf

MUSIC ON RECORD

and rondos—not surprisingly, since Hummel was always ready to answer popular demand and arrange for publication piano arrangements of his sets of orchestral dances, or potpourris from his own and other composers' stage works. His piano writing abounds in embellishments; contemporaries especially admired his skill as an improviser, and W. A. Mozart junior, whose own playing was praised for its 'elegance, finesse, precision and expression' that made it worthy of his father and of his teacher, Hummel, simply called him 'the king of pianists'.

Nearly 60 per cent of Hummel's published output is piano music, but there are also some striking chamber works—a Septet opus 74 for piano, flute, oboe, horn, viola, cello and doublebass which has been recorded several times, a Piano Quintet opus 87, the well-known and delightful *Septett militaire* opus 114, and a beguiling Clarinet Quartet of 1808 that has only recently been published; and there are also string quartets and various trios and smaller works with and without piano. The works that have the strongest appeal to a modern audience seem to be the concertos—which combine the pearly delicacy and brilliance of the solo virtuoso pieces with fine orchestration and the grander scale of orchestral music. Few composers since Hummel's great master have written so many works for solo instrument and orchestra. There are the Double Concerto for piano, violin and orchestra, opus 17, and the opus 94 Potpourri

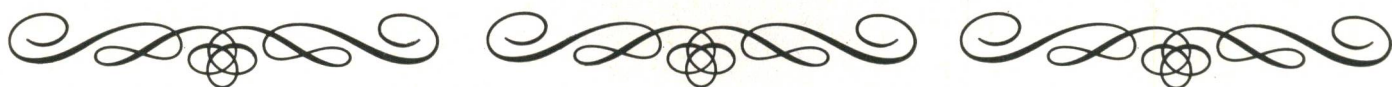
for viola and orchestra, later transcribed for cello, in which 'Il mio tesoro' from *Don Giovanni* emerges charmingly (a theme which, it is nice to think, the boy Hummel may have been the very first to hear back in 1787, when he was Mozart's pupil). Oboists occasionally take out with gratitude the Variations opus 102 (an arrangement of a four-hand Nocturne); there is a Bassoon Concerto and one for mandoline, transcribed from the opus 73 Piano Concerto; and there is the celebrated and endearing Trumpet Concerto of 1803, usually heard in E flat, though originally written in E major (and recorded in that key by John Wilbraham).

But the bulk of Hummel's music for soloist and orchestra is written for his own instrument: there are three sets of variations for piano and orchestra, three *Rondos brillants*, a 'Society Rondo' and a Fantasy. And there are no fewer than nine Piano Concertos—six that appeared in his lifetime, a posthumously published Concerto in F, and two in A major that when Dieter Zimmerschied compiled his *Thematisches Verzeichnis* in 1971 had still not been published. We can be grateful for the chance to hear recordings of the concertos in G, opus 73, A minor, opus 85, and B minor, opus 89. These are sterling pieces, conceived on a large scale, with a nice blend of breadth and of delicate detail; they are melodious yet anything but trivial—every now and again Hummel introduces a fugato or some other learned touch to remind us perhaps that he had studied with Albrechtsberger; but he wears his learning lightly.

During the Eisenstadt years Hummel composed three big Masses and many smaller church works, but apart from the operas there are rather few secular vocal works. It might be fun to hear the 'Aria with Variations' ('Tyrolienne pour la Malibran') that he wrote for the famous prima donna to sing in London; and he also set verses that Goethe wrote for Mara's 82nd birthday in 1831. There is indeed a wealth of music by Hummel that it would be good to hear; let us hope that 1978 will produce some exciting new recorded performances as an appropriate tribute to the memory of 'the old master', as Schumann once called him.

RECOMMENDED RECORDINGS

Piano Concerto in G, opus 73—Galling / Berlin SO / Bunte; Bassoon Concerto in F—Zukerman / Württemberg CO / Faerber. **TV 34348S**
Concerto in G, opus 73, arr. Mandoline—Bauer-Slais / Vienna Pro Musica / Hladky. **TV 34003S**
Concerto for Piano, Violin and Orchestra, opus 17; Piano Concerto in A minor, opus 85—Galling / Lautenbacher / Stuttgart Phil / Paulmüller. **TV 34028S**
Piano Concerto in B minor, opus 89—Galling / Innsbruck SO / Wagner. **TV 34073S**
Trumpet Concerto in E—Wilbraham / ASM / Marriner. **ZRG 669**
Fantasia for Viola and Orchestra, opus 94—Wallfisch / Württemberg CO / Faerber. **TV 34079S**
Clarinet Quartet in E flat—Hacker / Music Party. **DSLO 501**
Septet in D minor, opus 74; Quintet in E flat, opus 87—Melos Ensemble. **SOL 290**
Septet in C (Military), opus 114; Partita in E flat—Bratislava Chamber Harmony. **9111 0409**
Piano Sonata in F sharp minor, opus 81; Piano Sonata in D, opus 106 Malcolm Binns. **DSLO—530**



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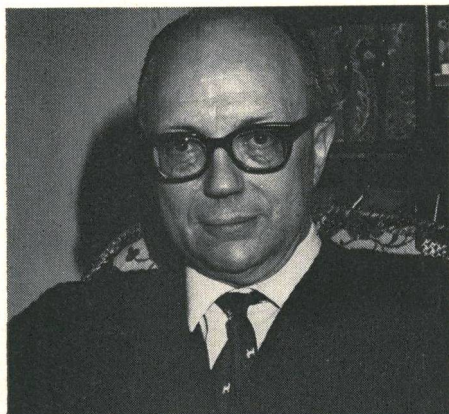
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Things I Hear Peter Turner

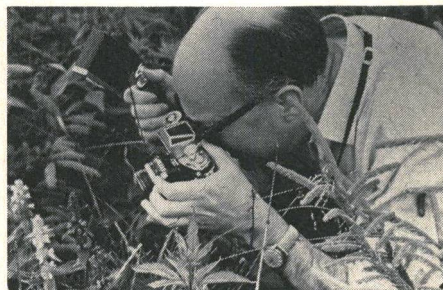


It may seem strange that one who has been preoccupied with recorded music (to say nothing of recording music) as long as I have should declare himself basically an opponent of recording musical performances. Such a declaration requires numerous qualifications, else I could not justify my activities at all; but, as I say, 'basically'...

The trouble with a recording is that it petrifies and renders permanently and endlessly repeatable, and playing music is not like that (at least not playing by a master): each time a great artist performs some work, he or she has to strive to understand and expound it more deeply than before. Failure to do that (or consistent failure, for it is doubtless beyond even the scope of genius to be ever on the heights) turns the performer from a great artist into a conveyor-belt—a constant danger which must haunt the artist in the watches of the night. With most recordings today, we do not even get a performance, warts and all, we get an edited-up version based upon numerous takes; and it seems to me that this very process of 'getting it right' is inimical to that one studied performance which is going to be, and sometimes is, different from all the rest.

As I see it, a recording is a monster which can transform reality into a permanent illusion. Even if I possess all the recordings ever made by one artist of one work, I am still far from capturing the essence. Nor am I convinced that musical experience ought to be

of such a kind: there is an experience after a great performance which somehow cannot be recaptured, even, say, by subsequently listening to a recording of that performance (and I am not talking about the unimportant matter, here, of 'fi'). Is not the truth that such an experience *cannot* be repeated? Do we not then need a different experience from a different performance? I know that when I listen to a recording of a work I know, what I hope to find is new light upon it; and I tend to judge a recording by those insights. It is only so, I believe, that a recording can add to my understanding of the mystery of music.



A less formal P. T. deep in his other hobby—in this case photographing the Limestone Woundwort (*Stachys alpina*) in a very rare albino form.

Looking Back Peter Gammond

IT'S amazing how fortunes change and fashions swing in the musical and record world. For years I have clung to the fine old HMV recording of Nicolai's *The Merry Wives of Windsor* (ASD580/1), a slightly abbreviated version published in 1963, played it to many friends and acquaintances who share my taste for tuneful opera, and have seen it deleted. I still treasure it for the rich Falstaff of Gottlob Frick and an up-and-coming Fritz Wunderlich, and still wonder why this endearing work is not a regular visitor, with its ready tailored setting, to our National Opera. I never expected that we should have two new recordings within a year—the gaily operetta-styled one under Klee (DG 2740 159) and now a splendid new one from Kubelik (Decca D86D3) which gains our allegiance by offering the complete text. All three have much to commend them and I hope their availability will mean a new stage interest in this seemingly neglected work. And what a miracle it was that a Kathleen Ferrier stage performance of Gluck's *Orfeo ed Euridice* should be discovered recorded in the Dutch Broadcasting Corporation archives, dating back to 1951. A distant but atmospheric recording in ancient mono but all the Ferrier magic that has made her a modern legend is there in the role that is always linked with her name (HMV RLS725). A real treasure trove. Incidentally I heard a tape the other day of Kathleen Ferrier singing a very amusing version of *The floral dance* at a party. I wish that could be issued too to show, if it need be shown, what a delightfully humorous person she was with all her depth of musical feeling.

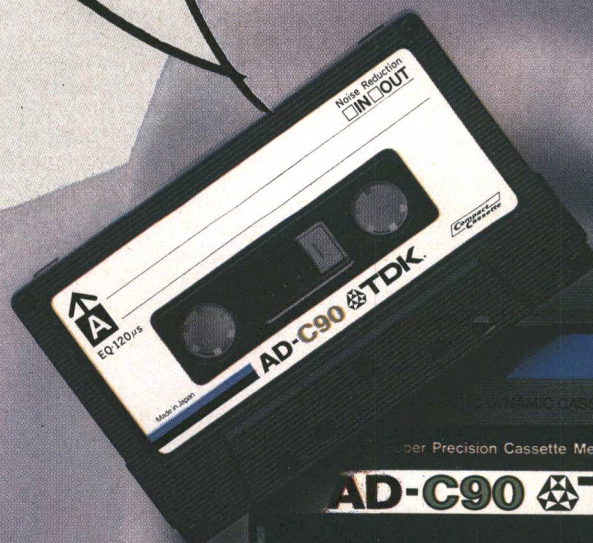
It must be because a couple of generations back there was French blood in our family tree that I have, contrary to the majority of my countrymen, a strong affinity with French music of all kinds. The very flavour of the language I find a constant delight. So I got much delight from Jessye Norman's excellent recital of French songs by Duparc, Ravel, Poulenc and Satie (Philips 9500 356), four well contrasted composers, but all possessing the wit and sophistication that lies behind all French music; a flavour well caught by this fine singer. So many desirable records must inevitably pass the ordinary buyer and I wonder how many, not knowing the works or the limpidly cool character of the music, would not think of trying some Monteverdi and Schütz. The 6th Book of Monteverdi's madrigals includes two lament cycles, the well-known *Lamento d'Arianna* and the less known *Lamento d'Amante* which is included on a fine Argo disc directed by Roger Norrington, together with five Schütz Motets (Argo ZRG847). Why not sample their rare flavour.

Amongst orchestral discs this month I can heartily recommend another of the fine series of 'named' Haydn symphonies which are being recorded by Neville Marriner and the Academy of St. Martin-in-the-Fields. Even with the superb Dorati collection around, it is well worth savouring such tasteful and moving performances as are given to Symphonies No. 44 'Mourning' and No. 49 'La passione' (Philips 9500 199). It would be hard to imagine better Haydn performances. Likewise the original orchestral version of

Haydn's *The Seven Last Words* (HMV ASD 3451) given a superb performance by the same forces. A superbly dramatic work, moving and beautiful. I see that Glazunov's *Characteristic Suite*, Op. 9, an early work, was labelled by our reviewer as good 'light' music. So it is—not light enough for the 'light' department, but pleasantly rhythmical Euro-Russian music that comes as an interesting discovery and proof that Glazunov did not put everything into *The Seasons* (HMV ASD3460).

For the piano enthusiast I can recommend three piano records I have heard this month. Firstly an exceptionally fine Schumann recital that shows off the tasteful skill of the outstanding pianist Murray Perahia. I am not particularly a Schumann devotee but his performance of *Papillons* struck me as one of the really great displays of musicianship that I have heard recently. The *Etudes* that it is coupled with are also convincingly played (CBS 76635). Slightly heavier fare in the recording of Liszt's B minor Sonata and Schumann's Fantasia in C by Alicia de Larrocha (Decca SXL6756) but, as usual, wonderfully sensitive playing from this fine artist. For the general and happily broadminded piano lover I can think of no better bumper gift than the cheaply priced double album '50 Classical Piano Favourites' (Pickwick 50DA322) in which Peter Katin ranges with his usual sensitivity through popular works by pianistic composers like Chopin, Debussy and Grieg (to name but three) and widens the interest with piano arrangements and items from the Star Folios like *Warblings at Eve* and *Stephanie Gavotte*. Wide-ranging enjoyment for all but the snootiest.

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Gramophone

Sir Adrian Boult

'This'll interest you', Sir Adrian told me as he accompanied me to the door of his flat in North London. From a glass cabinet full of scores he took down a bound manuscript reproduction of a page from Mozart's G minor symphony. Inside were the signatures of many Vienna Philharmonic principals, including Arnold Rosé, a colleague of Mahler and the orchestra's leader for many years. We had begun with Sir Adrian's reflections on Nikisch and the orchestral climate of those years, and had come full circle. In rehearsal with the VPO, led by the illustrious Rosé, there had been a disagreement on the exact phrasing of the first notes of the slow movement. 'It's what you want as conductor', Rosé told Boult. 'No, it's what Mozart wants as composer!' came the reply and the young Dr. Boult suggested they consult the manuscript. 'They were amazed that I, an English conductor, should remember the manuscript was upstairs', he recalled as the reproduction was returned to its shelf beside *Wozzeck*—not a score one would immediately associate with Boult. This postscript to my visit is as good an example as any of the man's modesty and humility—qualities that were repeatedly evident from someone who, at eighty-eight, is still at pains to emphasise his duty to the composer and his respect for the orchestral musician.

This unaffected and practical approach to the preparation of a score owes much to the methods of Nikisch, whose work Sir Adrian observed at close quarters in Leipzig in 1912–13. 'I sang in the choir, a bigish choral society rather like our Bach Choir. Then on the Tuesday we had the private rehearsal with the orchestra which students were allowed to go to; Wednesday was the public rehearsal and Thursday was the subscription concert'. Any notions that the public rehearsals were to be experienced as concerts, however, were firmly dispelled at a very early stage; the concert itself was the performance, the rehearsal, like Boult's today, an unself-conscious means to an end. This was hardly what the young Boult had been led to expect, however: 'At the rehearsal, the first bar of the slow movement of the 'Jupiter' Symphony came apart; I came away so disgusted that I decided to give the concert a miss. As I crossed the road from the Gewandhaus, I met Mrs. Hedmondt, then probably the leading singing teacher in Germany. She stopped me and said "Look here, Adrian, would you like my ticket for the Gewandhaus tonight?" Well, I very nearly said no thank you after what I'd just heard, but luckily I said yes, and I heard the best performance of the 'Jupiter' I've heard in my life!'

Something that Sir Adrian mentioned about Nikisch's repertoire prompted me to ask whether he considered today's specialisation a good thing. 'I think it's very wise to

specialise. Of course, specialisation was in everyone's mind when I joined the BBC in 1930.' But surely one of the strengths of those early days was the breadth of the Boult repertoire? 'Well, of course, I did everything I was told to do; I didn't make my own programmes, and it certainly was a wide repertoire. But if there was any Stravinsky about, Ansermet came over, and in any case, I gradually became bottled up with Holst, Vaughan Williams and Elgar. No; I don't blame anyone for saying "I'm not interested in that man's composition".' Few musicians would argue, however, that along with Beecham's LPO, Adrian Boult's BBC players established orchestral standards that made organisations on the other side of the Atlantic sit up with a jolt. As well as offering a woodwind blend that outstripped any previous standards here in matters of refinement and intonation, gulping slides were conspicuously absent from string playing in a way hitherto unheard of within these shores. This approach has remained a constant throughout Boult's career: both the 1932 BBC Orchestra *Enigma* and the latest one made in 1971 (HMV ASD 2750) provide identically clean and uncluttered string phrasing in the opening bars—a very different matter from the unashamed sliding of Elgar's own performance (World Records SH162) six years previous to Boult's 1932 recording. During those pre-war years, what rehearsal guidelines lay behind this new clarity? 'I should think probably I said absolutely nothing!' (thus flooring my ponderous deliberations in one fell swoop!). 'Perhaps orchestral style has changed with me and I haven't noticed! No, one of the great things about Nikisch was that he took what he found in an orchestra and made the best of that rather than trying to build up the whole thing. I certainly wouldn't change anything like that... if an orchestra is in the habit of playing with portamenti nowadays I don't think I'd entirely sit on it. That kind of thing doesn't worry me unduly. When



Mengelberg came to London he spent so much time taking the *Enigma* to bits that he had no time to put it back together, and I think that's rather a pity.'

At that point Lady Boult appeared with coffee and two glasses of water for Sir Adrian: 'I go for this plain stuff now... and milk.' I told him how as a boy I remember warm milk being brought along to him after a concert in Barry, Glamorgan. Incredibly, he remembered it. We went on to talk about the enormous role that Christopher Bishop and Christopher Parker have played in the production of Boult's EMI sessions over the past decade, resulting in some of the most natural-sounding performances (rather than inorganic splice-togethers) on disc. 'I like to think of it as a real trio, with the two Christophers and myself. I believe some conductors run back and fore to the listening room half the time—I don't do that at all. Both of them want me to hear something to start with, and I rehearse perhaps one or two passages until I'm certain of them. Then we do a straight-through, I go and listen to it, and then we either patch up slightly or do the thing again. I don't go near it again after that.'

As well as endearing itself to orchestral players (I was recently present at another conductor's sessions consisting of short, repetitive takes and frayed nerves), this approach to recording is both time- and money-saving—the first instalment of Sir Adrian's Brahms cycle (Symphony 3: HMV ASD 2660) was completed in leftover LSO sessions. 'After all,' I was reminded, 'what's the point in rehearsing a recapitulation into the ground when earlier on you've had the same music in a different key? A young man said to me the other day, "I hear you did the 'Pastoral' in two sessions" (HMV ASD 3456). "I did it in three-and-a-half!"—chuckles—"I think he was wasting his time!" to p. 109

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A few years ago *The Gramophone* carried a letter from Sir Adrian in which he appealed for public views on his customary division of violins across the platform. While there were protests that the celebrated humility had become unprofessional, the large majority of letters expressed a preference for the customary Boult seating plan. 'The Viennese classics, especially, contain hundreds of examples of antiphonal effects between the two sections—just look at the scores of Mozart and Beethoven.' Why, then, do the violins all emerge from the left in the pair of Lyrita discs of the Elgar symphonies (SRCS 39 & 40)? 'Simply because I really didn't want to argue... the recording engineer there was mad about it... "oh, you'll do it this way, won't you?"... and I regretted it.' Was that one of the reasons for re-doing the symphonies? 'No, I don't think it was... but they weren't very good, that's the answer!'

Listening to a Boult record one is immediately struck by the apparent 'rightness' and consistency of a chosen tempo—the outcome, one suspects, of his long experience as a broadcasting conductor. In the slow movement of Brahms' Fourth Symphony (HMV ASD 2901), for the duration at least, any other tempo would seem either earth-bound or lightweight. Many years ago Boult pointed out that a tempo that transfixes a concert audience often sounds simply too slow through a loudspeaker. When I put this to him Sir Adrian was a little more circumspect. 'Yes, I think that's right; it's very difficult to go further because it's so much a thing of the way you're feeling at the moment. In my BBC days I often used to say to the chap with the stop-watch, "It'll be slower tonight in the Albert Hall", and he'd say that it wasn't. You know,'—and then came a

further clue to Boult's secret of lightening or weighting a musical line without changing the basic speed—'it's got to *feel* slower, but be as alive as before.' Sir Adrian nodded in agreement when I pointed out the visual aspect of a concert as a further consideration. In view of the fact that his rostrum manner is renowned for its economy, what would he say to the first-time listener to Beethoven's Fifth who found it useful to have entries semaphored out to him? The reply, relieved only by the suspicion of a twinkle in the eye, was one borne of a strong view held over many years: 'I'd say he'd better take the score home and have an hour with it quietly in his study.' But what if he couldn't read music? A pause, then the twinkle broadened: 'Well, he'd better learn to do that, hadn't he? ... No, I know what you mean; people do say they like to see the thing being forked out, but... d'you think really that a serious musician isn't happier when he's shutting his eyes and listening to the music properly, thoroughly, rather than watching the conductor? I very much dislike people who talk about 'seeing' the conductor. Of course, Elgar and Vaughan Williams were wonderful conductors despite their relative lack of technique. They had the music 'here' (the head) 'and here' (the heart), 'and their personalities were remarkable. I'm not going to say that this economical approach is the only way; it works for me, that's all. All my life I've had to do music with a minimum of rehearsal and to get the best that way. I've been very fortunate to have been working with fine players, and so it's come off.'

One of those journalistic clichés still to be encountered is that which hails British conductors as great accompanists, a view, admittedly with much factual support. Barbirolli and Sargent earned golden opinions

from the leading soloists of this century, and Boult has received similar accolades, quite fittingly, for accompaniments such as the one provided for Menuhin's Elgar concerto or Suk's Beethoven (HMV ASD 2259 and 2667 respectively). Why should this appear a particular skill of British conductors? The reply was rather more far-reaching than I had bargained for: 'Well, I enjoy accompanying very much; I think that although the British are usually bad at speaking a foreigner's language they are quite sympathetic to foreigners, and take an interest in other people generally. England's always been a place to receive foreigners, so I think you might say we are good accompanists, from Gerald Moore right across the board. But I'm sorry, I must say, to see so many foreigners holding conducting posts here. I can't really feel that these conductors are necessarily so very much better than ours. It's all part of the British distrust of their own product—all along the line.'

We had been talking for over an hour—'stay by all means'—and we had not even touched upon Sir Adrian's recording plans. 'Goodness gracious... I'm eighty-eight, very nearly eighty-nine! They talk about another *Planets*; rather soon for that, I think [current one: HMV ASD 2301]. At the moment I'm doing the two Brahms Serenades—the young Brahms without his *estomac* and his beard! Somehow or other we didn't do them much in my BBC days. So we're in the middle of those at the moment; I'll look forward to getting them done. You know, I'm very slow: when I'm wanted in the listening room it takes me an hour to get there! I shall have to pack it in soon, I think.' Not yet, surely.

Andrew Keener

David Wilde

One of the most gifted British pianists of his generation, David Wilde is one of those people whose list of achievements makes for somewhat awesome reading. Prodigiously talented from early childhood (the Grieg concerto at the age of ten), he won an open scholarship to the Royal Manchester College of Music at the age of 13, college and school then vying for his time. Prizes for composition as well as for performance followed and in 1961 he was awarded Second Prize in the London Liszt Competition and First Prize in the Budapest Liszt/Bartok Competition. More prizes followed—International Competition in Rio de Janeiro and Queen's Prize in London *following* which he went on to study with Nadia Boulanger in Paris. On top of his hectic schedule of commitments as a soloist, he is also in demand as an accompanist, conductor, lecturer and teacher.

When we met, I asked him about his childhood studies. 'The boy prodigy stuff was between the ages of, say, seven and ten really

and it was during that time that Solomon, the great Solomon, heard me and took an interest. He was a great teacher as well as a great player, but by that time he was so much in demand that he couldn't take on long-term teaching. He placed me under Franz Reizenstein, his star pupil who was a great teacher himself, and took a sort of grandfatherly interest from behind the scenes. Reizenstein laid the foundations of a very serious technique. I'd been playing Liszt and Chopin, the Grieg concerto, Beethoven sonatas, the lot—*reasonably*. I have one record from that period made when I was eight, playing the Rachmaninov C# *minor Prelude*. One can hear weakness in the fingers, but the style of playing was already there. What Reizenstein did was to say "fine, so far so good, now we start again". He took me back to square one and we got down to the really serious business, which was marvellous. This was the foundation.'

Then on to Manchester at 13. 'Yes, with Iso Elinson who was a pupil of Felix Blumenfeld. That gave me a different angle on

things really. He had a very good sense of sound and was able to develop that aspect of my playing. And then, of course, I came under the influence of Richard Hall who was professor of composition at that time and under whose paternal influence the Manchester New Music Group (Harrison Birtwistle, Peter Maxwell Davies, Alexander Goehr and John Ogdon) was formed. You get a group together like that—great figures like Reizenstein, Elinson and Hall and people tend to gravitate towards them because they know they're there—it all just gels.'

I asked about his time with Boulanger—everybody seems to go to her! 'That was another fantastic experience, the sort that changes your whole life. I'd already started in a profession by that time. I'd been earning my living with the Worthing Municipal Orchestra and had gone on to Glasgow as BBC Staff Accompanist. While there I started going in for competitions and had some successes and including the really big one which was First Prize in the Liszt/Bartok competition in Budapest. Nadia Boulanger was on the jury

and that is how we met. She asked me to take part in a BBC master class the following year for her 75th birthday and then I applied for a Caird Foundation Scholarship from Dundee. I got a senior award for study abroad and wrote to her. I was 27 by that time, but I felt lacking in certain ways to support the reputation as an International Prizewinner and I told her that I felt in need of further study. She wrote the most marvellous letter back, typical Boulanger as I discovered: "I cannot say how impressed I am with your letter. Come and rely on me to the limit of the possible." So I went and relied on her to the limit of the impossible!'

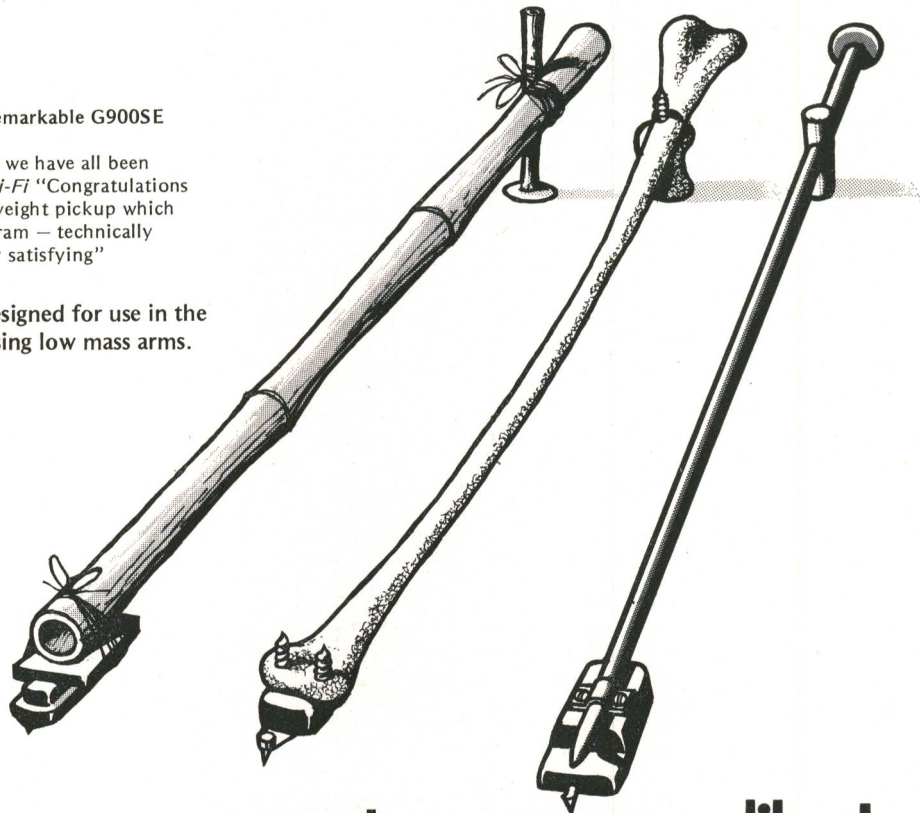
I made the mistake of asking about his reputation as a Liszt specialist. 'I don't know who stuck the Liszt label on me but I've never accepted it. I'm perfectly happy to play Liszt—there's nothing I object to in it. There are a number of reasons why it's happened—the London Liszt competition in 1961 and then the Liszt/Bartok competition for example.'

He had to play music by both composers for the latter. 'Yes,

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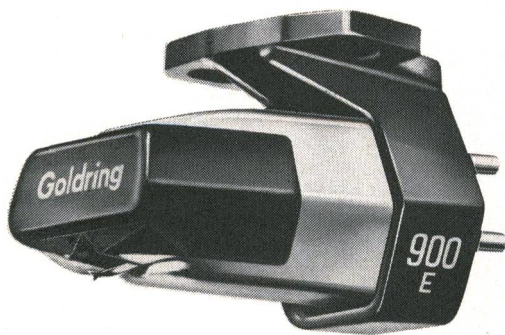
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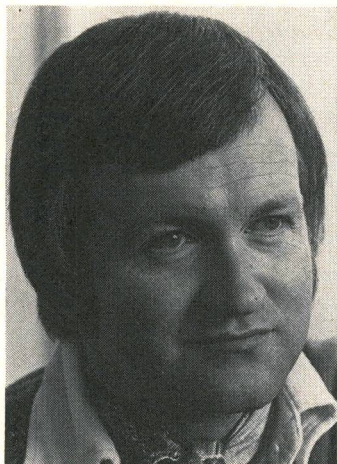
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but people quietly forget about the Bartok. In a season I might play three Beethoven concertos, a Mozart concerto, a mixed recital with modern works, Chopin and Bartok—Bartok is a very great love of mine, I play all three concertos—but the moment I include a work of Liszt: "Oh, you know, he's the Liszt specialist", which is total nonsense."

Does he find it difficult to learn new pieces? 'Well, no. I learn fast and without much difficulty. The complexities, responsibilities and distractions of life as you grow older make it a bit harder to reach the point of actually having committed a work to memory, but I learn almost instantly, almost anything.' Released this month (see record review section) is a record of Liszt's *B minor sonata* and the Schumann *Fantasy in C*, Op. 17, each work dedicated to the other composer.

'I think the B minor sonata is my favourite Liszt piece [too]—a wonderful work, and I've loved the Schumann *Fantasy* passionately for years. I've wanted to couple the two for a long time—it's been a dream and now I've finally done it.' When recording solo piano works, David has found that by doing several early takes, by having enough material recorded to complete the work if necessary, he can then relax and play again without worrying about the microphone. Often the subsequent takes will then turn out to be note-perfect, in which case complete movements, recorded without splicing, can be used for the final master and that clearly helps to achieve a unified and more compelling result.

When we met, David was preparing to leave for a recital tour. 'I'm going to India first—I give recitals in Bombay, Calcutta and some town I can't pronounce! And I'm doing some master classes there—then I go on to the University of Western Aus-

tralia to present a series of recitals, six of which come under the heading "The Legacy of Beethoven". I've taken Beethoven as the source of most of what we regard as modern in music—not quite all. It's stretching the point to go to Debussy and Ravel for example. There is a clear line to the Second Viennese school though—to Webern, I'm playing the *Variations*—and in the nineteenth century Schumann and Liszt were the obviously great Beethovenians.'

When he returns there are concerts with the Liverpool Philharmonic and the Ulster orchestra. He is also giving a recital at the Armenian Music Festival at St John's Smith Square in August. He has contributed to a book about Liszt, is preparing a new edition of the *Consolations* and hopes some day to publish more of his writings in book form.

'I have a dream that some day I'll collect together all my articles and lectures and so on and publish them in a book. The material is all there; I just haven't got round to using it yet.'

With the schedule he has, it's hardly surprising! Let's hope it will appear before too long.

Ivor Humphreys

Peter Grimes

Philips completed recording sessions of Benjamin Britten's *Peter Grimes* in London recently. Conducted by Colin Davis and, produced by Vittorio Negri, it has Jon Vickers in the title role with Heather Harper as Ellen. The cast also includes Norman Bailey, Elizabeth Bainbridge and Forbes Robinson—largely the same as in the recent, highly successful revivals at Covent Garden. The new recording is the first since Britten's own in 1959, so hurry up and release it Philips!

Gaudeamus

Gaudeamus Music Ltd have released recordings of Richard Stoker's String Quartets 1, 2 and 3 played by the Strange Quartet and of The Boy Singers of Our Lady of Grace, London, in a concert of music they took on tour in Europe last year. At £3.20 plus 25p postage, the discs can be obtained direct (post only) from Gaudeamus at 31 Clerkenwell Close, London EC1R 0AT or from Henry Stave, Discurio etc in the London area.

Flutes Galore

'The Stephen Preston Collection' is the title of the second release from Reflection Records. Comprising music for one or two flutes by, or arranged by, flute virtuoso

Michel Blavet (late 18th century) and Charles Nicholson (early 19th century) these splendid recordings admirably demonstrate the qualities of various 'rare and unusual flutes'. Stephen Preston is the only performer, so that those pieces which require two parts are realised by overdubbing techniques—extremely skilfully managed. The arrangements include Handel's *Harmonious Blacksmith*, Beethoven's Op. 106 *Air and Variations* and an amazingly gymnastic version of the Weber *Invitation to the Dance*. This is not the column for a review, but if it was: [A: 1*]! Reflection Records Ltd, 11 Pond Street, London NW3 2PN, Price £3.35.

Sanyo Jazz

The Sanyo Jazz Festival will take place at the Chichester Festival Theatre from October 11 to 15.

Among the performers will be Oscar Peterson, Stephan Grappelli, Ronnie Scott, Stan Tracey and Eberhard Weber.

Sanyo hopes to establish the festival as an annual event.

NFGS Weekend

High Leigh Conference Centre, Hoddesdon, was again in April the venue for the National Federation of Gramophone Societies' annual musical weekend.

At the opening meeting Reg Williamson introduced recordings of high technical quality from Lyrita Nimbus and Unicorn labels, followed by Tony Faulkner and John Boyden (Enigma Records) discussing their crossed-pair approach to recording with master-tape examples.

The Saturday morning sessions began with EMI's Bryan Crimp delighting his audience with a selection of notable EMI releases, followed by Alán Bellis (BBC Research Department) and colleague explaining PCM in simple language and playing various recordings on their latest digital tape machine. The overall quality and freedom from noise greatly impressed the audience as a fore-taste of audio things to come.

In the afternoon Dame Isobel Baillie, remarkably radiant at 83, talked with Bryan Crimp for some 90 minutes about her career in music making, illustrated by several of her famous recordings. Later, critic Hugh Ottaway, known for record reviews in *HFN/RR*, presented a scholarly appraisal of Vaughan Williams, which tied in with the performance on the following day of his 4th Symphony conducted by the Federation President, Sir Adrian Boult. The

song cycle *On Wenlock Edge*, sung by Ian Partridge, was reproduced from EMI master tapes, with a superb sound quality via Revox 700, QUAD 33/405 and KEF 105 loudspeakers.

After lunch, the dynamic enthusiasm of conductor Norman Del Mar enthralled his audience in an open and unprepared Q & A exchange on musical matters. At the next session Eric Fenby, to whose extraordinary partnership with Delius we owe our possession of the composer's later works, talked of his years at Grez-sur-Loing, and the characters who thronged the household every summer. The NFGS expressed its thanks to KEF for the loan of reproducing equipment.

D. A. and B. J. W.

A Apoloj

You may have noticed that we liked Strauss 'Graduation Ball' (p. 141 May) on 'Decca SXL 6867'. In fact, its really SXL 6869. Sorry about that!

Direct News

Cleverly engineered, *You're Something Special* by American singer Robert Goulet is available in a limited edition from Orinda Recording Corporation. Orinda are to open an English office, but those interested should contact William John Murphy Enterprises, 3 Woodlands Drive, Stillorgan Blackrock, Co Dublin.

Regent Acoustics have released Lab 6 from Sheffield or Laboratories, *Comin' From A Good Place*—a follow-up album from big band ace Harry James and recorded at the same session as the earlier *King James' Version* and just as sonically stunning, though musically a little on the tepid side. Also new from Sheffield are two discs featuring the LAPO. Lab 7 is a Wagner album conducted by Erich Leinsdorf and Lab 8, mentioned in 'Gramophile' last October, is devoted to Prokofiev.

Two more releases from Crystal Clear are now available. Virtuoso concert organist Virgil Fox plays 'melodic selections' (!) by César Franck, Johan Alain and other well known French composers. 'The Fox Touch Volume 2', CCS 7002, was recorded at the same sessions as his first disc last year. The other release features Arthur Fiedler and the Boston Pops, CCS 7003, in Tchaikovsky's *Capriccio Italien* and Rimsky's *Capriccio Espagnol*. At £9.50 each, the discs are distributed by Metrosound Audio Products Ltd, 4-10 North Road, London N7 9HN.

YOU may have noticed that my title does not refer to 'Organ Music'. The difference may seem trivial, but is really crucial, since the latter term is often used to indicate some special kind of art-form with obsessive undertones. By contrast, the title puts the emphasis on the music, where it belongs, specifying the organ simply as the communicating medium demanded by the composer.

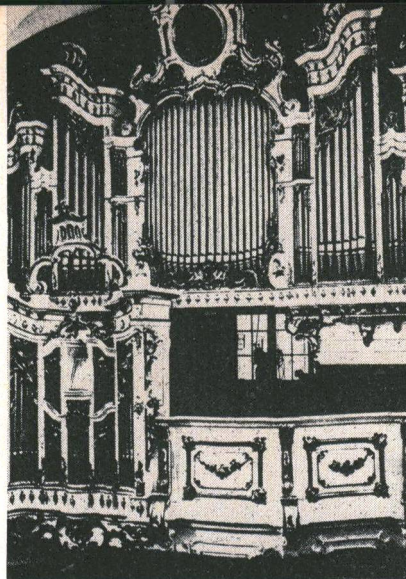
The tendency to isolate the organ from the general corpus of classical music is probably rooted in several causes. First, organ composers in general are rarely well-known in other fields. There are obvious exceptions—Bach, for example—but most of the better known orchestral composers wrote little or nothing for the organ, even though many of them expressed great admiration for it. Mozart and Beethoven come to mind, while Bruckner was himself an organist, and a brilliant improviser.

Second, the organ is one of few instruments that are normally heard solo, only rarely in combination with others. It can produce an incredible variety of tone-colour, with the ability to sustain any note indefinitely, while its extremes of fundamental pitch exceed those of the orchestra by an octave at each end of the scale, and its dynamic range is at least comparable. Thus the organ is self-sufficient and independent—it is not an alternative or a substitute.

Next, organs are not portable (except for a few special-purpose ones), so we have to go to a specific place to hear any particular one 'live'. In most cases this is a church of some kind. There are some instruments in public concert halls, but the number is limited by the vicious circle in which the ratepayer won't stump up for an organ he doesn't want, and which he won't want until he is familiar with its possibilities.

Finally, the fact that most organs are in churches gives them a religious connotation which may prejudice those who are not aware of their wider potential. It is ironic that the Church (in the non-sectarian sense) has been the inspiration, the patron and the disseminator of a significant part of our musical heritage, yet it is indirectly responsible, I believe, for some of the apathy—even antipathy—with which the organ is often regarded. What did you hear when you last attended a church service? Maybe a time-killing 'voluntary' to start with, often a dull, vague meandering up and down the keyboard and the stoplist, in a monotonous legato, devoid of discernible musical structure. Some hymns, no doubt, with only a few dynamic changes to distinguish one dreary verse from the next. At the end, quite often, a properly scored work, perhaps somewhat at the limit of the player's ability. No matter—any 'fluffs' will be drowned in the clatter and chatter of the departing congregation, for whom the organist's labours are no more than an aural hindrance to gossip.

No, I'm not getting at the poor organist, whose unselfish efforts are usually unencouraged and always hopelessly undervalued. I'm merely suggesting that many folk are conditioned from an early age by this presentation of the instrument. Nor does it help that so many organs are relics of a best-forgotten era in which dull, woolly



Discovering Music for Organ

Trevor Attewell outlines a potentially deep subject.

sounds issued (with difficulty) from some cubby-hole into which the instrument had been stuffed to keep it tidy and out of the way.

It may seem that I am devoting much space to the reasons for the comparative unpopularity of the organ, but it is necessary to recognise the cause before one can suggest a solution. Apart from any preconditioning, the organ, like chamber music, is admittedly an acquired taste, which is equally rewarding to those who do acquire it.

What, then, is music for organ really all about? To make any sense of this repertoire it is necessary to appreciate the most fundamental difference between the organ and, say, an orchestra. All orchestras of similar composition sound pretty much alike tonally, but organs differ greatly, the main variations being geographical, with further divergences between individual makers in any area. Such differences are fascinating in themselves, but the important point is that most classical organ composers wrote for a particular type of sound, and so do some contemporary composers. Hence music of a particular 'school' can only be heard to best advantage when played on the kind of instrument for which it was written. This is equivalent to stating that an orchestral work ought to be played by the instruments for which it was scored, which may seem pretty obvious, but the point is not nearly well enough appreciated by some record producers.

It is also worth noting that any organ composition lasting for more than ten or fifteen minutes constitutes a major work, and there is nothing written for organ to compare with a Mahler symphony, for example. Thus most recordings offer recitals of various works, usually by one player on one instrument. The works may be by one composer, or may be related in some musical sense, but

marketing policy often dictates a 'something-for-everyone' approach, with the corollary that most people will find some items they don't like. One must be selective in choosing organ discs, to avoid disappointment.

With this background in mind, a start into the organ world could well begin with the concerto form, which couples the orchestra with the organ. Handel is the obvious choice, and the organs used in his concertos are generally small 'chamber' instruments, or a limited range of stops on a bigger one, to fit Handel's probable intentions. Haydn also wrote in this form, while Poulenc uses a larger instrument in his example.

Of all the 'schools' of music for solo organ, the North German must take pride of place. Not only is it the most voluminous, but it has the distinction of having been crowned by J. S. Bach, with his towering genius and enormous output. But Bach is best allowed to grow on one, and there is much to be said for starting with his predecessor, Buxtehude, whose greatness lay mainly in his 'free' compositions—the toccatas, preludes and fugues. Some are on the grand scale, and offer drama in the interplay of their musical forms, from the rhapsodic, showy, almost romantic nature of the free episodes to the economical strictness of the interspersed fugal passages, in which the part-writing is clear and easily followed. Like most of his contemporaries and successors, Buxtehude also wrote 'chorale preludes'. Put at their simplest, these are variations of various kinds built around old hymn tunes. Buxtehude's are easily decoded—the tune, more or less heavily ornamented, is clearly laid out, line by line, in the upper (soprano) part, with rich but straightforward harmonies, the lines sometimes interspersed with short, related episodes.

It is interesting to compare Buxtehude with his contemporaries, including those who came from, or were strongly influenced by, the South European school, with its quite different organs. These instruments lacked the multiple, powerful, clear, glittering incisive choruses of the North, tending more to variety of tone colour, with less reed stops and smaller pedal departments (this is, of course, a gross over-simplification of a complex matter). Such contemporaries included Pachelbel, Kerll and Muffatt, whose music is distinguished by its clever economy of means, and often by its more lyrical nature. One of the discs listed at the end of this article includes all the above composers.

Next, perhaps, we could try a little of the French classical school. Again, the organs were quite distinctive, changing little over several centuries. They generally had one or two principal choruses (these are the main foundational tone of an organ) of about equal power, but pitched an octave apart, plus flutes, solo mutation stops (harmonics of the basic pitches) and reeds. French reeds are completely individual, beautifully 'free' in sound, with bass notes of great power and roundness, yet having quick 'attack'. Also typically French is the cornet, not a reed (though it sounds like one) but usually a set of five flutes of different pitches, sounded together. It is almost impossible to put these sounds into words—one must hear them, and this is one of the pleasures

of the organ. It is a pleasure much enhanced by the few, and more enlightened, record productions that include the 'registration' (list of stops used) in the sleeve information.

French music has always been quite stylised, and the title of each section of many classical works specifies the registration required. For example, 'basse de cromorne' calls for the cromorne stop (English cremona or German Krumhorn, though none of these actually sound alike!) played in the bass register. Much of the repertoire was based on parts of the liturgy, notably the Roman Mass, but even this owed much to secular influences also—the theatre, the courtly dance and the popular song. Listen to Clérambault's suites, Roberday's fugues and caprices, and the gay Noëls of Daquin, Balbastre and Dandrieu, among others, to hear the variety of form and texture in the French idiom, which embraces not only stylishness, but also humour and the essence of humanism.

In our own country the organ has had a chequered career. Virtually wiped out by the Puritan thugs, British organ building was only just getting started again while Buxtehude was writing for the fully-developed North German instrument. For two centuries our instruments could play only the rather limited output of native composers, which tended to be chorally based. Equal temperament was adopted belatedly, and only rarely could an organ with pedals be found before the 19th century. About 1840 some builders were starting to make organs which could be claimed the equal of any, and on which much of the repertoire could be played, but it was not to be long before musicality became neglected in favour of tonal vulgarity. Upper-work was abandoned, and a plethora of stops at the same pitch were substituted. Many were orchestral imitations which were pleasant enough individually, but did not blend into an integrated whole. Composers weren't interested, and many organists took to playing orchestral transcriptions, often indifferently arranged.

About the middle of the twentieth century came the classical revival, led, many would argue, by the RFH organ. Once more we had the ability to play any of the literature and to get the best out of it. A modern English builder will make you a German or French organ, or an eclectic one, as you wish.

Early English composers, then, such as Blow, Purcell or Gibbons should be heard on simple, manualist organs, but later works can use the English Cathedral organ, which, if only because of its normally vast proportions, can be used for much of the general repertoire if some care is taken in registration. Modern rebuilds are greatly extending the scope of these mammoths of the organ world. Some, by builders such as 'Father' Willis, Arthur Harrison and William Hill, were finely conceived, and are rightly preserved in original condition.

Most of these organs can give good accounts of the 'romantic' era, and the works of such composers as Mendelssohn, Rheinberger, Reger, Liszt and others. European organs had, on the whole, followed the general downward trend in design, though they tended to retain at least the basic chorus structure with a certain degree of clarity.

Some scores do call for oddities such as the Rollschweller—a pedal giving a controllable crescendo to full organ, and some organs do provide these aids, although many experts regard them with considerable disfavour.

Perhaps it can now be seen that music for organ can be enjoyed on more than one level. There is the music itself—surely the whole *raison d'être*, with its individuality, and its own range of composers. But this cannot be separated from the tonal structure, so essential to proper performance, which is a complex study and fascinating in its own right. Further, different tonalities imply differences in design and manufacture which extend from the selection of the types of pipe to be used, through their voicing, even to the way in which air is admitted to them, plus a whole new world of mechanics. By getting involved in all these facets the listener enhances enjoyment of the results. Of course, like 'hi-fi', there is a trap to be avoided—it is all too easy to become so enmeshed in the means that one loses all sight of the ends, and becomes labelled an 'organ nut'. A concentration on the mechanics, however obsessive, is perfectly legitimate, but the real rewards for most people lie in the music, and, similarly I don't believe any maker can produce a truly fine instrument unless he has both skill in his hands and music in his soul. Most art forms have their parallels—you may immerse yourself in the comparison of the subjective beauties of a Rembrandt and a Gauguin, or you may concern yourself mainly with the relative thicknesses and chemistry of their paints!

We have properly left the pinnacle until last—musically at least. No brief introduction to the organ world can convey the scope or magnificence of the music of Bach. He is perhaps the one composer that no organophile would willingly be without, and to whom one turns again and again to recharge one's batteries. He offers a rich diet, best approached a little at a time, maybe starting with the more accessible works, such as the shorter chorale preludes. Although it is quite astonishing how Bach's writing shines through even the most indifferent performance, it should be approached initially through a reliable guide, and some examples are included in the record list. When one can listen to a complete Bach recital with enjoyment and inner refreshment, coupled with at least some appreciation of the techniques of the writer and performer, then truly the key to this particular world of satisfaction has been found.

We must perforce end on a more technical note. While live recitals are essential to extract the real atmosphere, a lot of our listening will have to be 'canned', and suitable equipment is needed if we are to hear it properly. The main difficulty is in reproducing pedal parts at realistic levels, since any organ of reasonable size produces high powers at frequencies down to 32-7 Hz, while many go down a further octave to 16-35 Hz. Many modern discs give appreciable outputs below 30 Hz, where groove amplitude is the limiting factor. At the pickup end, a full-organ climax in the inner grooves can cause distortion, and one needs the best stylus shape and high tracking ability. I have used a V15/III with every success, and have recently tried the

new ADC ZLM, which sounds open and neutral, and tracks well.

At the remote end of the chain, very few ordinary loudspeakers can do justice to the bass available. Among those I have heard and/or reviewed, only the large units, such as the IMF, can cope really adequately. Not every household can afford or accommodate units of the necessary size unless they can fulfil some other useful function as well as 'loudspeaking'. Add-on sub-woofers are able to do this (and reproduce those lower parts that other loudspeakers cannot reach). One well-proven DIY version, now brought up to date since its first appearance in this magazine, is resuscitated on page 91. ●

RECORD LIST

Handel Organ Concertos: There are some textual and/or performance reservations of a purist nature concerning all current sets. These are sometimes matters of opinion, and the following are likely to appeal to most hearers. (Numbering follows Grove.) Concertos 4, 7, 14, 17: *Eduard Muller* / *Schola Cantorum Basiliensis* / *Wenzinger* (1 record)—**Archiv 198393**

Concertos 1-8, 13-16, 18-20: *Power Biggs* / *LPO* / *Boult* (1960 recording) (3 records)—**CBS 77358**

Concertos 1-12, 13-16: *Marie-Claire Alain* / *Jean François CO* / *Jean François* (4 records)—**Erato STU 71097**

Buxtehude and his contemporaries: *Lionel Rogg* (Baden Cathedral) (2 records)—**HMV SLS 801/2**

Buxtehude—Complete works (hard-driven accounts but beautiful sounds): *Michel Chapuis* (various organs) Vol. 1 (1 record)—**Telefunken AF6.42001**. Vols 2, 3 & 4 (each 2 records)—**Telefunken EK6.35307-9**

Le livre d'or de l'orgue Français: A set of 31 discs, available separately, with representative examples of French music from the Renaissance to the present. Supplies have been difficult, but fresh imports are expected. A unique set. (All commentaries in French only.) Played by *André Isoir* and *Louis Thiry* on various authentic organs.—**Calliope CAL1901-31**

Clérambault: Two Suites: *Gillian Weir* (St. Leonhardskirche, Basel)—**Argo ZRG 742**

Roberday—Fugues and Caprices: *Gillian Weir* (St. Leonhardskirche)—**Argo ZRG 744**

Couperin—Parish and Convent Masses: *Gillian Weir* (Prediger-Kirche, Zürich) (2 records)—**Argo 4BBA 1011/2**

Organ Music from the City of London: *Christopher Herrick* (various historic organs) includes a few early works—**Vista VPS 1047**

Stanley—Organ Voluntaries: *Richard Ellyn-Jones* (University College, Cardiff)—**Argo ZRG 745**

Various English Cathedral Organs. Many of these have been recorded, especially by Vista—see any catalogue for complete list. Samplers, six different organs on each (various players)—**Vista VPS 1010 & VPS 1033**

J. S. Bach:

The Orgelbüchlein: *Peter Hurford* (Australian organs) / *The Alban Singers*. Includes sung versions of the chorales for identification and comparison (3 records)—**Argo ZRG 776-8**

The '18' chorale preludes: *Peter Hurford* (All Souls, Washington) / *The Alban Singers*. Includes sung versions (2 records)—**Argo ZRG 843-4**

'Complete' Bach: A 3-volume set excluding all works of doubtful attribution: *Lionel Rogg* (Silbermann organ at Arlsheim). Vols 1 & 2 (each 6 records)—**Harmonia Mundi HM 521-2**. Vol. 3 (6 records) to be issued shortly.

Romantic works. Examples are to be found on most 'recital' discs. French romantic composers are included in the Calliope series (above). Special issues include:

Rheinberger—Complete Organ Sonatas: *Various organists* and organs (10 records, available separately)—**Vista VPS 1011-20**

Reger—4 works: *David Sanger* (St. Jude, Hampstead)—**Meridian E 77004**

Widor—Complete organ symphonies, Vol. 1: (*Various organists*, Coventry Cathedral) (4 records)—**RCA RL 25033**

Liszt—Complete organ works, including transcriptions: *Various organists* (5 records)—**Hungaroton SLPX 11540-4**

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Record Reviews

MOZART: BETULIA LIBERATA reviewed by Kenneth Dommett

MOZART: 'La Betulia Liberata', K118

Birgit Finnilä | Kari Lövaas | Kate Gamberucci | Ursula Reinhardt-Kiss | Claes Ahnsjö | Siegfried Vogel | Berlin Radio Chorus and CO | Negri
Philips 6703 087 (3 records) (£11.97)

Oratorio did not occupy a high place in Austrian musical esteem during Mozart's lifetime though it was encouraged in Italy, where it took the place of opera during the Lenten season, and, of course, in England where Handel had established it as a national phenomenon. It is not surprising therefore that the average student of music would be hard put to it to name a Mozart oratorio. In fact there is only one that is completely original, *La Betulia liberata* (Betulia liberated).

The genesis of *La Betulia liberata* is unclear. In a letter from Vicenza dated 14th March 1771, Leopold Mozart wrote that Wolfgang was composing an oratorio and one must assume that it was to *La Betulia liberata* that he referred. If so, the composition must have occupied Mozart on the journey back to Salzburg from Milan. Nothing is known of a performance, but in 1784 Mozart sent for the score from Vienna. It is unlikely that anything came of this though it is perhaps interesting to note that in 1785 he fitted the music of the unfinished Mass in C minor to an Italian text entitled *Davidde Penitente* and within the next year or so arranged three Handel oratorios for his friend Baron Van Swieten, including *Messiah*.

La Betulia liberata follows the Neapolitan style in that it is in two parts as opposed to the three acts of an opera, and it has no duets or ensembles. Normally these oratorios had lengthy secco recitatives, but Mozart has mercifully chosen a text where these are comparatively short. The libretto is by Metastasio, and is by common consent one of his less inspired pieces, which is probably why Hasse, the composer who favoured him most, rejected *La Betulia liberata*. One Giuseppe Calegari did set it, however, and his version may have been given in Padua in 1771 or 1772 and Mozart may have known it.

The story ostensibly concerns itself with

the relief of the beleaguered city of Betulia by Judith who insinuated herself into the camp of Holofernes and succeeded in decapitating him, bringing back his head as a token of her success. This dramatic series of events is virtually ignored by Metastasio in favour of the rhetorical conversion to Israel of the Ammonite prince Achior, finally convinced by the sight of Judith's bloody trophy and perhaps also by the evident power of Jehovah.

Despite the silliness of the plot Mozart treated it with complete conviction. He prefaced it with a complete three-part single movement sinfonia in D minor similar to that of *Lucio Silla* though less dramatic. Drama as such is, of course, absent from *La Betulia liberata*: the characters are static and there is no stage action as there would be in opera. All the same, Mozart does manage very successfully to give some of the arias an operatic inflection, notably in Ozia's opening aria, *D'ogni colpa* and in Amital's *Quel nocchier che in gran procolla* (No. 11). But his innate dramatic instincts are reserved for their fullest flowering in the accompanied recitative following on from this last where Judith is telling of her exploits in Holofernes' camp. And there is further evidence of it in the exciting clash of major and minor harmonies in Judith's earlier aria *Parto inerme* in Part I.

This recording had its origin in a performance given during the winter festival at Salzburg which specialises in the early large scale Mozart works. Unlike the recent recording of *Mithridate* it contains no singer of international stature, at least, none apart from Birgit Finnilä that I can recall. In general the performances by the soloists are of a high vocal standard though they are likely to raise the continuing question of the treatment of *appoggiature*, those rising or descending intervals which 18th century musical practice demanded should be introduced at the ends of phrases but which were written as if the notes were the same and of equal value. Here the inconsistency of treatment, not only

by various members of the cast but by the same singer, is very noticeable. It is not a point I make usually, but here the so-called 'blunt ends' do stick out. So too does the absence of a varied reprise in the arias, all of which are of the da capo variety. Finally one might have hoped for more imaginative vocal cadenzas then we get in this performance. What is lost in stylistic decoration among the singers is made up for by the unusually adventurous harpsichord continuo playing of Jeffrey Tate who, in some respects, is a star of the show. At least, he is not afraid to fill out the bare outlines of the recitatives, and his flamboyance tends to throw the reticence of the singers into even greater relief. But perhaps it is easy to make too much of this, for the majority of listeners may not be concerned with such refinements. If they are not, one can promise them satisfaction from the Amital of Kari Lövaas, the firm bass of Siegfried Vogel's Achior and Claes Ahnsjö's rich tenor Ozia. These are really the central characters, but Birgit Finnilä's Giuditta is a performance of real stature. There are only three choruses, short but important, and well sung by the Berlin Radio Choir.

The orchestral playing is crisp, rhythmically secure and excellently balanced. Vittorio Negri, the conductor, has already made a reputation for himself in performances of sacred music of the Italian baroque and this excursion into a later period will add to his reputation.

There is no doubt that the appearance of this Mozart rarity will attract the avid Mozart collector: whether it will attract a wider audience is perhaps more questionable. It has been said often enough that early Mozart usually contains enough of genuine musical interest to justify listening to it, and *La Betulia liberata* is no exception. Philips are to be congratulated on releasing it. Hopefully their recording of *Ascanio in Alba* will not now be long delayed. [A: 1]

RECORD RATINGS

Record Ratings are designed to summarise our critics' findings, but should preferably be noted in conjunction with the full reports—and taken as a guide only.

Recording	Performance
A	Very Good
B	Good
C	Moderate
D	Poor
H	Historical (pre-LP)
	H (or 1, 2, 3, 4 as appropriate)

Occasionally a record may be worthy of special mention, taking it beyond the 'very good' bracket. In such superlative cases a star is added to the letter or figure as appropriate: e.g. B: 1*, A*: 2 (exceptionally) A*: 1*. © Hi-Fi News & Record Review.

INFORMATION

STEREO, MONO, QUADRAPHONIC and STEREO TRANSCRIPTION

Any record reviewed in this magazine may be assumed to be stereophonic unless its number is accompanied by:

- Ⓜ (monophonic)
- Ⓣ (stereo transcription)
- Ⓢ (quadrasonic: stereo compatible)
- ® refers to a U.K. reissue

Cassettes are Dolby unless otherwise stated. Compatible Ⓢ records reviewed as 'stereo'.

RECORD FAULTS

'Recording' ratings should be taken to refer to recorded quality, but do not take account of individual pressing faults encountered with our test samples. Readers may assume that a certain proportion of such variable faults might occur among commercial pressings.

PRICES

We do our best to ensure that prices given are correct, but we cannot always guarantee accuracy, since price rises are too frequent and often arrive just after we go to press.

Best of the Month

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J. S. BACH: Organ Music, Vol. 1
Lionel Rogg (org)
HMV SLS 5087 (5 records) (£12-45)

Appearing almost simultaneously with another complete Bach set by the same player, this first volume, from Pathé tapes, concentrates on the 'free' works, including trio sonatas, preludes (and related forms) and fugues. They are played on four organs, two by Metzler, in Geneva and Netstal, and the Poul-Gerhard Andersen organs at Copenhagen and Sorø.

Lionel Rogg was once noted for the rigid classicality, even clinicality, of his Bach playing, but he has shifted considerably from that position. Here, his treatment is free in most respects, sometimes approaching the romantic, with frequent registration and manual changing, showing a marked preference for very contrasting tonalities. His phrasing and use of tempo is also very free, the former occasionally bordering on irregularity. These are powerful interpretations, and they will be more generally acceptable than those of the 'young' Rogg, but my own ideal would lie between the two—it seems to me that there is a risk of losing sight of the beauty inherent in the disciplined construction of the music for the sake of 'pretty' effects. But this is very much a personal reaction, of course.

The French engineers have given us a rather close recording, which is crisp and clear, but all the sides except No. 3 have been rolled off too much in the bass, with the result that the top can be a bit over powering at times. An appreciable bass boost does a lot to restore the very beautiful sounds of these organs. [B: 1] *Trevor Attewell*

J. S. BACH: Complete Organ Works, Vols 1 & 2
Lionel Rogg (org)
Harmonia Mundi HM 521 and HM 522 (6 records each) (£10 per volume, special price) (Rediffusion)

This 3-volume set is one of two current versions by the same player, both of French origin, and it omits all works of doubtful attribution. The first two volumes each contain a good cross-section of Bach's output, with a number of 'free' works (including the trio sonatas) and the *Clavierübung* in Vol. 1, and a further wide selection, including the '18', in Vol. 2.

Only one organ is used—the Johann Andreas Silbermann at Arlesheim, a fine instrument containing a proportion of original pipework, carefully restored by Metzler (1959/62), with some additions, but in keeping with the Silbermanns' practices elsewhere.

The performances are very fine, and they show rather less romanticism and freedom of

registration, phrasing and tempo than the same player's EMI set. Here, the general control is tighter, and the colours less exotic, but none the less easy on the ear. Very much a matter of personal preference, naturally, but I find this version more authoritative and satisfying. Not so happy is the consistent omission of the first-line repeats in chorale preludes, which seems to me to dissociate them from their original function.

These volumes are very well recorded, not too closely, letting the building provide a good ambience. The pedal notes are adequately covered, and the organ is well imaged, with a sensible width. The only defect, apparently maddening to some but inaudible to others, is the presence of wow and flutter, but the sound is clean in all other respects. A fairly basic booklet by Rogg, in French only, includes the specification. Of the current sets, this one must head my list by a good margin, and the introductory price is a pleasant bonus. [A/B: 1]

Trevor Attewell

BACH: Cantata No. 106, 'Actus tragicus'
TELEMANN: 'Trauer-Cantate'
Elly Ameling (sop) / Maureen Lehane (alt) / Kurt Equiluz (ten) / Barry McDaniel (bar) / Aachen Cathedral Choir / Members of the Collegium Aureum / Pohl
Harmonia Mundi 20 21441-9 (£3-99) (Rediffusion)

A recording of a Telemann cantata is as welcome as it is evidently rare, though the coupling of this funeral work with Bach's mighty and prodigiously mature *Gottes Zeit ist die allerbeste Zeit* predictably leaves us in no doubt that contemporary preferences were ludicrously misguided. Bach was probably 22 when he wrote this superb piece; particularly in no. 2, a sequence of chorus-tenor aria-bass aria-chorus, he consummated an old tradition and gave it new and astonishingly concentrated vitality. The performance of this often-recorded work is appropriately dignified and sensitive, though the choral singing leaves something to be desired. The Telemann work could hardly help seeming diffuse by comparison, though the gentle sounds of the Collegium's old instruments highlight the charm of the scoring. Barry McDaniel is splendid in the sequence of bass numbers, and Elly Ameling is delightful in her one aria, though she seems to have been set rather far back in the recording hall. It is good to have this cantata available on disc. The sleeve presentation is quite inadequate, with texts given only in French, and with no indication at all of the layout of Bach's masterpiece (not even its text-incipit is given). [B: 1]

Peter Branscombe

Leonhardt's Bach Again!

J. S. BACH: The 48 Preludes and Fugues for Klavier (BWV 846-893)
Gustav Leonhardt (hpds)
Harmonia Mundi HM 20309-13 (5 records) (£14-95) (Rediffusion)

This recording was made some time ago, but it has not been available here before, and, indeed, greatly to our loss. The sheer achievement of playing the work is colossal, but Leonhardt's interpretation is so authoritatively fresh, so technically commanding and so imaginatively evocative that it makes demands on the listener as well. There have been other recordings, including a respectable one by Helmut Walcha for DG Archiv, but this recording has so much life and imagination that it absolutely defies comparison.

Especially instructive and challenging is Leonhardt's attitude to rhythmic interpretation: he characterises each phrase so clearly, and projects it with such conviction that, even though we are conscious of his original approach as an 'interpretation', his reading does not become tiresome on repeated hearings. Sometimes a line seems to drag, sometimes to surge forwards, yet, on average, this must be among the steadiest accounts of Bach from a metronomic standpoint. There is such variety of touch, too: the good harpsichords used here (Rubio/Taskin for Book I, Skowronek/Dulcken for II) enable the performer to feel a sense of caressing control over the sound-source, and the recordings (by two separate firms onto tape originally) have managed to convey the details of the playing so well. Sometimes I am worried by Leonhardt's snatched approach to short notes (D major Fugue, Book II, for example), but this is only a personal quibble. If Harmonia Mundi can maintain this standard, they are, indeed, welcome back into this country: very highly recommended. [A*: 1*]

Stephen Daw

J. S. BACH: 3 Sonatas for Viola da Gamba and harpsichord (BWV 1027-9)
Wieland Kuijken (gba) / Gustav Leonhardt (hpd)
Harmonia Mundi HM 22225 (£3-99) (Rediffusion)

This is an outstanding recording at a highly competitive price. The previously closest rivals have been Wenzinger (DG Archiv), whose sense of structure and grace is exemplary, but whose tone and interpretation both lack projection and Harnoncourt (on Telefunken), whose whole attack with the bow is rather too cello-like for me now, although I liked his account at first. Kuijken excels in the recording studio; his approach is controlled but flexibly evocative, and his bowing has that ideal caressed-cum-plucked quality that is the special province of the gamba. Leonhardt accompanies most discreetly and sensitively, and the whole is well recorded. [A: 1*] *Stephen Daw*

C. P. E. BACH: Quartet in a, Wq. 93 □ Quartet in D, Wq. 94 □ Quartet in G, Wq. 95 □ Fantasy in C, Wq. 59/6
Nicholas McGegan (flt) / Catherine Mackintosh (vla) / Anthony Pleeth (vlc) / Christopher Hogwood (fortepiano)
Oiseau-Lyre DSLO 520 (£3-99)

I eagerly await each new issue in the excellent Florilegium series, and this latest is quite as valuable and enjoyable as any of its predecessors. The chance to have on one record the set of three quartets for flute, viola, cello and keyboard that CPE wrote in the last year of his life is not to be missed, especially when the performances and recording are as good as they are here. An additional bonus is the inclusion of the Fantasy that concludes the Fifth Collection of the *Clavier Sonatas and Free Fantasies* that Bach himself published three years earlier, in 1785. The beautiful quartets we owe to the researches and perceptive editing of the late

E. F. Schmid—until 1929 they were thought to be lost, but Professor Schmid found them, two in autograph and the third in a contemporary copy, in the Singakademie, Berlin. The unusual sonorities are finely explored, and a gem among old instruments used is the fortepiano of the early 1770s by Matthäus Heilmann, lent from the Colt Collection. Balance and tonal qualities are natural-sounding, though the viola line does not always come through as easily as is the case with the other instruments. But whether he is drawn more to the soulful slow movements, the opening movements in their moderate tempo, or the spirited and witty finales, the wise reader will acquire this record without delay. [A: 1]

Peter Branscombe

BARTOK: Sonata for 2 Pianos and Percussion*
□ STRAVINSKY: Concerto for 2 Solo Pianos: Sonata for 2 Pianos
 Alfons and Aloys Kontarsky (pnos) | Christoph Caskel, Heinz König (perc)*
 DG 2530 964 (£4.35)

There are currently four versions of Bartok's Sonata, including a 1940 recording by the composer and his wife Ditta, but this new one must assuredly outclass them all for sheer brilliance, clarity and excitement. Its detail is a point in its favour, at least as far as I am concerned. In all the other versions I have heard—I have not heard the Hungaroton recording—much of Bartok's important contrapuntal ingenuity is lost in poorly focused recording. After all, this is a composition for percussion as well as the two pianos and the tympani in particular have a significant part to play in the musical development. Here, despite a fairly close recording of the two pianos, the two percussion players are sensibly balanced so that we can hear them clearly. Of the performance by the Kontarsky brothers all I can say is that I am surprised we have not had a recording of this masterpiece from them before now. The rhythmic control is exemplary, and if their performance is perhaps more consistently percussive than others, including Bartok's own, their reading seems to me to be a valid and illuminating one. The two Stravinsky works also receive exciting performances, all the more rewarding as there are at present no other recordings of the Sonata and only one old Supraphon version of the Concerto. This issue can, therefore, be confidently commended to everyone interested in this not overcrowded repertoire, since it contains three of the most significant modern contributions to it in performances that it will be difficult to improve upon. [A: 1*]

Kenneth Dommett

BEETHOVEN: Symphony 3 in E_b, Op. 55 'Eroica'
 Cleveland Orch | Maazel
 CBS 76706 (£4.29)

An urbane 'Eroica', including first-movement repeat, with generally rapid tempi, in sound that compares unfavourably with Szell's old (1958) Cleveland stereo recording. Taking this last point: I suppose we should no longer be amazed by such things!

Maazel adds one or two individual touches—for instance, violas come into unexpected prominence just after Letter K (1st movement); the plucked crotchets, bars 20–23 (finale) are louder than their surrounding quavers. Superficially interesting, these seem irrelevancies when you hear Szell. The horns are extremely polite, and Beethoven's repeated sforzandi (exposition, just before E; development, around K) are hardly stressed by Maazel. Again, listen to the enormous sense of power generated by Szell, and to his

gripping commitment both to his players and to the score, and you wonder at the ease and reticence of this new Cleveland version.

The sound here is unpleasantly harsh and compressed in forte passages, and although stereo positioning is specific, detailed balances are not always satisfying. In the Szell, admittedly tape-noise is high, and the balance is frankly close, but instrumental timbres were truer, and bassoon and horns could clearly be identified. Maazel's account is not remotely in the same interpretative class. [B: 2]

Christopher Breunig

BEETHOVEN: Symphony 5 in c, Op. 67 □
Fidelio Overture, Op. 72b
 LSO | Jochum
 HMV ASD3484 (4) (£3.99)

Notwithstanding the splendour of sound on this new record, and the fact that Jochum now includes the finale repeat in the fifth symphony, I cannot really recommend this coupling in preference to the 1960 Bavarian RSO, now Heliodor (2548 255).

In both outer movements there the tempi are marginally faster, if at all different. What is perhaps surprising is the consistency of Jochum's reading in matters of detail—that sharp *fp* accent, bar 13 of the scherzo, for instance—although his treatment of the coda to the opening movement has now become excessively mannered: the motto theme emphatically slow, then from 483 almost mirroring the adagio interpolation with oboe cadenza (also slower than in previous recordings) up to the fortissimo. Odd, when Jochum is so meticulous in his regard for the text, say in the finale.

The sound is very good, with much stronger woodwind voices than in the new Boult *Pastoral*—same producer/engineer though! One oddity is that in the *trio* the cellos extend right beyond the centre-line of the staging. Comparisons also show Jochum's acceptance of the normal LSO disposition, whereas the Bavarian horns are sited extreme right.

But my final word should be to argue the relative merits of that old recorded performance. I believe that the tempo for the first movement now gives an unwanted heaviness; where the faster earlier version gave a spirited defiance to the music, well within the classical manner, the new one helps neither the lyricism nor the power of the scoring. And generally the Bavarians play in a more responsive, fresher way. In the scherzo Jochum gets the LSO violins to elongate their grace-notes (just before the tympanist's lead-in to the finale)—the effect is interesting, but sounds like an imposition. And there are curious instances of blurring of articulation here. The overture, placed last, gets an efficient performance, but without that release of joy at the end of the DG version. In a word: absorbing, but I don't like the first movement. [A: 1/?]

Christopher Breunig

BEETHOVEN: Symphony 6 in F, Op. 68 'Pastoral'
 LPO | Boult
 HMV ASD3456 (4) (£3.99)

When you hear the 'Pastoral' with violins divided across the stage, as here, you feel that any other arrangement shows plain insensitivity on the part of the conductor. The antiphonal writing is especially telling in the first-movement development, and comparing Boult with Klemperer I thought the latter (a slower tempo) sounded relatively schoolmasterly about the disposition.

What disappoints me is the new recording itself: not significantly better than the 1958

EMI for Klemperer. The first violins dominate an otherwise opaque and anonymous texture, and they are given a whiskery edge. I would have liked more of the winds—you hear the flute brought forward for his line, bars 240–7. However, better this production than the brutal changes of balance on the latest Karajan/DG. In the second movement Boult is much quicker than Karajan, but closely matches the 1937 BBC SO/Toscanini—not surprisingly, perhaps. At the opposite pole is Furtwängler, with his decisive *ritardandi* (Unicorn). But under Furtwängler the wind solos flower best—Boult hardly seems to give them time to sing their phrases, and the results are often prosaic. A few frailties of ensemble also mark this as the work of a wise and experienced Beethoven conductor who should have recorded the symphony a decade ago.

Two other distinctive passages in this reading are the coda to the second movement, and Boult's account of the Storm—where the location of the tympani gives a welcome dimension of depth to the SQ recording. [B: 1]

Christopher Breunig

(Note: LP transfers of the classic VPO/Walter 1937 set are available from import specialists, in superb Japanese pressings—HMV/Angel GR2123 (M).)

BEETHOVEN: Piano Sonata 30 in E, Op. 109 □
31 in A_b, Op. 110 □ **32 in c, Op. 111**
 Kendall Taylor (pno)
 Meridian E77007 (£2.99) (Selecta)

I find these performances extraordinary. Knowing that Kendall Taylor has taught at the RCM for years, it is difficult to throw off the idea that one is listening to a demonstration of how to play these pieces, how to surmount the problems of articulation of structure and detail. 'Now this is how to...' One hears the ghostly voice over, as every aspect of the music is highlighted: ritards, and accelerandi exaggerated, almost a parody of correct enunciation. And one other echo: the 'English Backhaus'—turn to Backhaus' final series of Beethoven sonata recordings, and you find something rather similar in Backhaus' free attitude to tempo, a style quite outmoded. The antithesis of Pollini's diamond-like objective accuracy. If you insist on the three last sonatas grouped like this, Gulda on Eclipse ECS723 is preferable.

Still, perhaps for you Taylor's 'spontaneous' (yet seemingly cool and externalised) readings may represent the truth. Certainly his playing is beautifully engineered. [A: ?]

Christopher Breunig

BEETHOVEN: 32 Variations in c, G.191 □ **6 Ecossaises in E_b, WoO. 83** □ **2 Rondos, Op. 51** □
6 Bagatelles, Op. 126
 John O'Connor (pno)
 RCA GL25134 (£2.49)

O'Connor begins well, with an arrestingly clear articulation of the first of the C-minor Variations—but ends depressingly, with an inadequate reading of the marvellous late Bagatelles. These need greater lucidity, rhythmic subtlety, and inwardness than O'Connor can yet provide: his 'significant' hesitations become tiresomely predictable here. And rarely does he seem 'inside' the music. In spite of decent sound—RCA's surfaces slightly fizzily—this is not a recommendable recital. [A: 3]

Christopher Breunig

BIZET: 'Les Pêcheurs de Perles'
 Cotrubas | Vanzo | Sarabia | Soyler | Chorus and Orchestra of the Paris Opera | Prêtre
 HMV SLS5113 (4) (2 records) (£7.95)

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At last EMI offer us a new version, and with Georges Prêtre in control we certainly get a dramatic account of the score. Where the first act male duet is concerned—'Au fond du temple saint'—comparisons are always made with Gigli and De Luca in their historic recording. Vanzo and Sarabia tend, rather like Gedda and Blanc, to treat the whole thing rather coolly in the modern manner, but make a very neat and melodious job of it. The old days of heavy romanticism are gone.

The opera gets a fresh surge of life with the arrival, by boat, of Leila, the priestess, bound by an oath of chastity, whom Nadir and Zurga have both fallen in love with on a previous occasion, unaware of her sacred identity. So the plot unfolds. Ileana Cotrubas proves a strong and effective Leila, certainly the star of this recording. Her presence inspires Nadir to a good rendering of the other pearl of this opera 'Je crois encore entendre'—a great tenor favourite. Bizet's score is full of tender and romantic music and I feel that Prêtre gradually builds the right mystical atmosphere. Certainly the whole recording has a nice theatrical atmosphere about it, the feeling of stage performance. I don't feel that this is an overwhelmingly great performance—apart from Cotrubas, the star quality is absent; but it is a satisfyingly dramatic one of a commendably high standard and captures the appealing spirit of Bizet's score. The recording is of a quality that suggests a less than ideal venue. It lacks the ideal spaciousness of a good opera recording and become rather congested when the full forces are engaged. The solo voices become rather hard at louder moments. This is certainly a commendable issue in most respects and supplies us with a worthy recording of a neglected opera. [A/B: 1] *Peter Gammond*

'ENTRY OF THE BOYARS'

Glazunov / Glinka / Halvorsen / Ole Bull / Rimsky-Korsakov / Schallaster / Sibelius
Bournemouth SO / Berglund
HMV ASD3514 (4) (£3-99)

Berglund's concert of Russian and Scandinavian pieces is named after Halvorsen's march, written for the Norwegian National Theatre—a mixture of something an RAF Band might play, and Johann Strauss—it struck me as far less arresting than Schallaster's lively Moldavian dance *Liana*, which opens the second side.

The programme is newly recorded, apart from two reissued Sibelius items, from *Karelia* and *Scènes Historiques*. The quieter pieces and the waltzes (Glinka and Glazunov) need the seductive charm of a Beecham, and after Svetlanov's *May Night* overture Berglund's sounds very dull. The generous acoustic of Southampton's Guildhall colours the sound; dynamic range is wide, but there is a suspicion of veiling here—SQ transfer compromises?

So, a 'Saturday Concert' marred by some prosaic direction, though authentic and convincing in the Sibelius. [A: 2]

Christopher Breunig

CHARPENTIER: Te Deum □ Magnificat

Felicity Lott (sop) / Eiddwen Harrhy (sop) / Charles Brett (c-ten) / Ian Partridge (ten) / Stephen Roberts (bass) / King's, Cambridge / ASM / Ledger
HMV ASD 3482 (4) (£3-99)

The *Te Deum* in D, one of four settings of the text, is the larger piece. Contrasting sections scored for resplendent military instruments and four-part choir, and for soloists lightly accompanied, form a fine complementary whole. The *Magnificat* in D minor, one of ten Charpentier settings, is very tautly constructed,

with three grand choral sections interspersed with more intimate sections for soprano followed by a trio of lower voices; the work ends with a lovely Amen that is at once ornate and simple. The performances are lithe, fresh and affecting. The continuo of Thomas Trotter and Marilyn Sansom provides a supple yet firm bass for the lighter-score passages, and the Academy and the choir of King's College revel in the bold and sonorous tutti sections, even if the sound is occasionally a bit raw owing to the reverberance of King's College Chapel. There is an elderly low-priced coupling of what may well be the same two settings from Vanguard, but I have not heard it. Even if it does contain the same works, I cannot doubt that this fine new issue is the one to have; it is made from material prepared by Julian Rushton from the autographs, and he introduces the works in a valuable note. [A: 1]

Peter Branscombe

CHARPENTIER: Leçons de Ténèbres

Judith Nelson (sop) / Anne Verkinderen (sop) / René Jacobs (c-ten and ten) / Wieland Kuijken (bass viol) / William Christie (org and hpd) / Konrad Junghänel (theorbo)

Harmonia Mundi HM 1005-7 (3 records) (£8-97) (Rediffusion)

Here is a recording of major importance. It includes the three Lessons and Responses for Tenebrae on the Wednesday of Holy Week, and the three Lessons for Tenebrae on Maundy Thursday; a second set is promised that will include the Good Friday Tenebrae Lessons and further Responses for the Wednesday of Holy Week. Charpentier's settings range from austere declamation to the most demanding of ornate vocal lines; the instrumental accompaniment rings rich changes on organ and harpsichord, theorbo and bass viol; every now and again a tiny instrumental flourish, or a miniature Italian church concerto-like movement, relieves the tension (there is never a hint of dullness!) of the Lamentation texts. Whole sides present just one singer with two accompanying instruments; vocal duets or trios are rare. Yet the cumulative power and expressiveness, the mingling of objective narrative, exhortation and highly personal experience, is overwhelming. The difficulties of Charpentier's vocal writing (*port de voix*, *tremblements* etc.) are formidable; these artists carry their task off superbly, with great musicianship, taste and control. René Jacobs is the true hero, for he has transcribed some of the music, written very thorough and impressive notes (only the proof-reading is disappointing), and he sings both the tenor and counter-tenor music. The recorded quality is high: warm acoustic, careful balance, silent surfaces; though it must be said that side 3 in my copy reveals a tendency towards distortion. A specialist issue perhaps? Yes, yet one that will give deep satisfaction to many for whom French baroque was thought to be a closed book. [A: 1]

Peter Branscombe

CHARPENTIER: 'Louise'

Sills / Gedda / Dunn / van Dam / Lublin / Hill / Paris Opéra Chorus and Orchestra / Maîtrise de la Résurrection / Rudel

Angel SCLX 3846/1-2-3 (3 records) (£13-80)

This recording, from Angel, partakes of an international cast, which almost inevitably includes some doubling. Martyn Hill, for instance, appears most effectively as le Noctambule and the Pape des fous, an artist picked out both for the excellence of his singing and of his French. Beverly Sills brings all her skill and experience to bear

on the title role, a double-edged quality, for something of the youthful impetuosity of Louise eludes her. In that respect, Nicolai Gedda as her lover, Julien, is much more credible. Yet their love duets are as ardent as one could wish. Excellent performances from Mignon Dunn as the Mother and José van Dam as the Father.

The special, spatial problems of the opera have been met with considerable skill, and the listener gains an impression of depth and perspective (though Julien's guitar in Act 2 is barely audible). Technically, I think this recording has the edge over the CBS version and in this particular music, I prefer Gedda to Domingo. On the other hand, one could argue that Cotrubas is better suited to Louise than Sills and that Bacquier is an even stronger Father than van Dam. [B: 2]

Christopher Grier

CHAUSSEON: Poème de l'amour et de la mer □

DUPARC: 5 Songs with orchestra

Janet Baker (m-sop) / LSO / Previn

HMV ASD 3455 (4) (£3-99)

Dame Janet's versatility is amazing. As is to be expected, her French is excellent, and she sings these beautiful songs with lovely tone and immaculate phrasing. In the first three Duparc songs she has chosen the high keys of the original versions, but in 'Au pays où se fait la guerre' and 'L'invitation au voyage' which were written for mezzo-soprano voice, the medium keys are used. It goes without saying that the higher keys present no serious technical problems to the artist, but they *do* make it more difficult for a mezzo-soprano to enunciate the words at the extreme top of the voice, and personally I would have preferred the lower keys for this reason, although the diction for the most part is excellent. Duparc was meticulous with his markings and throughout the songs there are instructions such as 'très doux', 'très calme', and at the voice entry of 'La vague et la cloche' he wrote 'Simplement et sans nuances'. The artist pays full attention to all of these, except in the phrase 'Brilliant à travers les larmes' in 'L'invitation au voyage' where the composer has written a diminuendo with the added remark 'très doux' on the word 'larmes'. In her recording Maggie Teyte was quite magical in the way her voice softened and as it were melted into the accompaniment at this point, and Dame Janet makes rather less of it. But this is a minor criticism and these recordings will surely be welcomed by all lovers of French song. The Chausson *Poème de l'amour et de la mer* is superb in every way, the final song 'Le temps des lilas' being exquisitely sung. The accompaniments by André Previn and the London Symphony Orchestra are played with great sensitivity and the recording is good with excellent balance between soloist and orchestra. Texts included. [A: 1]

John Freestone

CHOPIN: Nocturnes, Vols I & II

Fou Ts'ong (pno)

CBS 61827, 61828 (£2-79 each)

Although Field detested Chopin's approach to the *Nocturne*, Chopin acknowledged his debt to the Irish composer in many ways, one of which was probably the use, in the No. 10 in A \flat , of a theme very similar to one used by Field in his No. 5 in B major. The similarity is even more apparent if one listens to the orchestrated version by Stravinsky for use in *Les Sylphides*.

This is without a doubt the most appreciative playing of the *Nocturnes* I have heard in a long time, with a fine sense of feeling

for each piece, instead of the overall 'Chopin mood' that seems to grow over other collections of his music. Fou Ts'ong even manages to bring back the freshness to the No. 2 in E \flat , which had become extremely hackneyed due to being overworked not only among pianists, but among musicians of other kinds who have found in it a tune that lends itself to all kinds of cloying and sentimental arrangements.

Regrettably the recording quality seems a little uneven and the quieter passages and low notes sometimes seem to take a dive towards obscurity. [B/C: 1]

Oliver Cambren

CHOPIN: Ballades 1-4 □ **Polonaise No. 6 in A \flat Major, Op. 53** □ **Fantaisie Impromptu in c \sharp Op. 66**

Cristina Ortiz (pno)
HMV ASD 3552 ④ (£3-99)

If the *Nocturnes* represent Chopin at his broodiest, and the *Etudes* at his peak of technical brilliance, the *Ballades* must represent him at his most romantic, reaching for a quality of expression he had not yet attained. Whatever introspection or subjective reaction acted as the springboard for the *Ballades* it was obviously turned outwards in this flow of feeling which resulted in what is possibly the best of all of his work.

Miss Ortiz plays with remarkable facility and listening to her performance further crystallizes an impression that is forming that women make better interpreters and performers of Chopin than men do.

One point I am at a loss to understand is why a solo pianist is in need of quad recording, unless it was intended to reproduce the acoustics of the studio, in which case it has failed. There are occasions when the sound is indistinctly 'woolly'. [B: 1]

Oliver Cambren

CHOPIN: 5 Etudes □ **Barcarole** □ **Valse Op. 42, No. 5** □ **Scherzo No. 2** □ **Impromptu No. 2** □ **Polonaise No. 6**

Janina Fialkowska (pno)
RCA RL 37071 (£3-49)

I must admit that the name of Janina Fialkowska was unknown to me until I received this record, and to see a pianist of her obvious lack of years (to judge from the sleeve photo) attempting some of Chopin's most brilliant and technically arduous pieces primed me in advance not to be too disappointed with what I heard.

I was delightfully astounded by being treated to one of the finest performances of Chopin I have ever listened to. The pieces are executed with a technique of such fluid lucidity that it fairly dazzles, and if Janina Fialkowska goes on to fulfil the promise inherent in her playing at the moment she can be expected to rank with the world greats, contemporary or otherwise.

Finger-knotting pieces like the 'Etude on the black keys' (5th in G \flat , Op. 10), the No. 8 in F, and the Scherzo No. 2 she glides through as if they offered no challenge at all, which is, of course, the mark of a real master.

Her slight shifts of emphasis in the well-known No. 12 Etude I found a little unsettling on the first hearing, although it by no means goes against Chopin, but on second and subsequent listenings, I was forced to the conclusion that every other pianist I had ever heard had played it wrongly.

I was also pleasantly surprised to find a disc of complementary quality to the artist's talent, clean sounding without any overt coloration in the recording. Keep it up RCA!

Miss Fialkowska has been described as a pianist in several thousand—I think she is one in a million. [A: 1*]

Oliver Cambren

CHOPIN: Nocturne in F minor □ **Preludes: No. 4 in E minor, No. 6 in D minor, No. 7 in A Major, No. 10 in C sharp minor, No. 13 in F sharp Major, No. 17 in A \flat Major, No. 20 in C Minor, No. 23 in F Major** / **SCRIABIN: Prelude No. 5 in D Major, Op. 11** / **RUBINSTEIN: Melody in F** / **RACHMANINOV: Polka de V.R.** / **SCHUBERT: Sonata in A Major**
Shura Cherkassky (pno)
Oiseau-Lyre DSLO 24 (£3-99)

Whether the placement of the mikes at this recording was done carelessly, or was the deliberate brainchild of some fiendish engineer bent on convincing us this really was a 'live' performance, I do not know. But I would have been happy to have been convinced by the occasional cough from the audience, which comes over as clearly as the pianist's notes.

As it happens the gratuitous applause at the end of some of the tracks sounds like it was the subject of the recording session, and so we are caught in a devilish trap. Cherkassky is a seductive player who has us engrossed in the playing to the point where we are still hanging in there when the last note falls away. At which point the applause comes in with enough hi-level to take the top of your head off, and this is unavoidable if the volume level is set anywhere near enough to bring out the full tone of the instrument.

I would have liked to have listened to this without the fear and trembling or the need to sprint across the room every time a piece finished and the applause was about to start. [B/C (D for the applause?): 1/2]

Oliver Cambren

CILEA: 'Adriana Lecouvreur'

Scotto / Domingo / Obratzsova / Milnes / etc / Ambrosian Opera Chorus / New Philharmonia / Levine
CBS 79310 ④ (3 records) (£12-49)

This is a fine vivid recording with plenty of space and movement effective even in stereo. It is a studio rather than a theatrical sound (too good for the average theatre) but it means that no detail is lost and the balance is well under the engineer's control. Little effects of pizzicato strings come out sharp and precise. The only criticism is that, as in most studio recordings, the voices appear to be in front of the orchestra rather than on a stage but this is a matter of production and doesn't detract from the overall impact of the set. The opera itself has had a chequered history of being in and out of favour and fashion. There is no apparent reason for this when we hear it again; it is a superbly operatic opera and its star role, that of a great French actress, is ideally conceived for the prima donna. In style it hovers somewhere between the classical Italian of Bellini and the later romanticism of Puccini, harking back to both, though mainly to the latter as a tale-end production of the great Italian school, premiered in 1902 and first heard at Covent Garden in 1904.

James Levine takes the score by the scruff of the neck and gives it a performance that is full of vitality and intensity from beginning to end. He has a star cast who obviously enjoy the theatrical quality of the work and give it all they can. It would be wrong to single out anyone for special mention, but, without the advantage of long historical hindsight, Renata Scotto seems as fine an Adriana as most will have heard. Tebaldi, on the rival Decca set, had a great triumph on the stage in this but she did not always come over as a great actress on record though always a great

singer. Scotto has the advantage of both attributes. Domingo is a more consistent singer than Del Monaco and likewise a more convincing actor. As evident from its unusual opening scene where the lesser characters enter without much preamble into a musical dialogue, there is a cast of tremendous strength here who interact with one another to great effect and the stars are stars by the weight of their roles. I need say no more except that this is a superlative opera recording. [A*/A: 1*]

Peter Gammond

CONSORT MUSIC OF THE ENGLISH RENAISSANCE

Works by Holborne, Morley, Dowland, Philips, Byrd, Johnson and Beven
Extempore String Ensemble
Meridian E77003 (£2-99) (Selecta)

The Extempore String Ensemble consists of five young performers on all sizes of viol, the baroque violin, the lute and the mandore (a small lute) and on this disc use various well-known 16th century English works as a basis for extemporisation. The tune is first played through verbatim and then has a descant added (generally on mandore) or is used as a basis for divisions or melodic variations. There is plenty of evidence that this was the regular practice at the time and has a lot in common with New Orleans jazz in that individual skill is of little consequence if it is not allied with a strong feel, almost empathy, for what the other musicians are doing (or going to do). The players here work extremely well together, improvise with taste, and interest is added even to bewhiskered old *Greensleeves*. Other highlights for me included *The King of Denmark's Galliard*, Holborne's familiar *Night Watch* and an *Alman*, performed on two lutes and a theorbo, by Robert Johnson.

Engineered by John Shuttleworth, who used, we believe, just a coincident pair, the sound is sumptuously resonant, absolutely precise and has that lovely baroque sheen to the violin and viols contrasted against, and integrated with, the plucked instruments. A full recording star is withheld because of a personal view that the spacious acoustic is not completely apt, bearing in mind the domestic nature of the music, but I hope we are going to hear more from both the Extempore and Meridian. To echo the Praetorius quote on the sleeve, '... the English Consort ... makes an especially beautiful effect and gives forth an appealing and lovely resonance.' [A*/A: 1]

John Atkinson

'CONTRASTS IN BRASS', Vol. 2

Works by Alwyn, Bozza, Buonamente, Carr, Dubois, Jacob, Lachner, Mendelssohn, Rossi and Scheurer
Locke Brass Consort / Stobart
Unicorn RHS 349 (£3-99)

This is a worthy successor to Vol. 1 (RHS 339) and the term 'contrasts' is applicable to both the widely-ranging selection of music and much that characterizes some individual items. In one or two cases what would seem to be considerable challenges to recording technique have been tackled impressively, and the overall quality of tone, presence and perspective undoubtedly merits a recording star. For the most part, the playing, too, is outstandingly fine. Much of the music is virtually unknown, which may be reckoned a point of interest, but it seems fair to remark that some of it holds one's attention more as a vehicle for the performers than in its own right. There are two items from the seventeenth century, one of them being an apt transcription of what appears to be a psalm-setting for three choirs. From the nineteenth

century there is a pleasing Nonett by Franz Lachner and a transcription of the arrangement by Moscheles (for military band) of Mendelssohn's *Song without Words*, Op. 62/3. The remaining items, including William Alwyn's *Fanfare for a Joyful Occasion* and Gordon Jacob's *Salute to USA*, are from the twentieth century. [A*: 1/1]

Hugh Ottaway

COUPERIN: Three lessons for the service of Tenebrae □ **Motet for Easter Day**
Judith Nelson (sop) / Emma Kirkby (sop) / Jane Ryan (gba) / Christopher Hogwood (org)
Oiseau-Lyre DSLO 536 (£3.99)

Traditionally performed in a darkening church, the first two settings by Couperin are for solo voice with continuo, while the third is scored for two sopranos, a simple but clever device on Couperin's part for adding dramatic intensity to the latter part of the work.

It is perhaps this part of the work that holds the most musical interest, and certainly as far as this particular performance is concerned, is one of the highlights. The text comes from the *Lamentations of Jeremiah*, and Couperin set each of the Hebrew letters to flowing melismatic phrases with lingering suspensions. The singers bring off these sections beautifully, with tremendous poise and control.

At the very beginning of the recording, I was dimly aware that there was a lack of togetherness, and I was not convinced that the intonation was faultless. However, these problems soon disappeared. The continuo is thoughtful and discreet, and the overall recorded balance is natural. [A: 1]

Colin Evans

THE DAWN OF ROMANCE

Songs and music of the early troubadours of Provence

Martin Best (ten) / Martin Best (lute)
HMV CSD 3785 (£3.89)

It must be said at the outset that for reasons of space, the personnel details above are considerably simplified. Martin Best doesn't just sing and play the lute (although if he did, this would be ample reward), he directs a studio group of eight other musicians who contribute to the performance when the need arises. The record explores the music of the troubadours who lived during the twelfth and thirteenth centuries, and incidentally, includes full texts and translations of the songs, together with interesting bits of background information.

I am very impressed with this splendid record. The performances have a freshness and vitality about them, probably because the players improvised within the framework of the songs during the recording sessions, rather than simply recreating someone else's preconceived ideas. The sounds themselves are fresh and exciting, and there are some surprising effects, such as the striking appearance of a bell-tree in one of the numbers! Mr. Best has been careful to create a sound which is as authentic (in the best sense of the word) as possible. The string tension and tone quality of the lute is evidently much the same as those used by the troubadours, several pronunciation guides have been consulted, and Mr. Best uses a nasal style of singing which was apparently practised by many of the troubadours.

Although the recording quality is not stunning, it is of high quality, with good perspective and a nice wide sound stage. If you have the least interest in music of the period, go out and buy this one. [A: 1*]

Colin Evans

DEBUSSY: Prélude à l'après-midi d'un faune □
La Mer / **RAVEL: Bolero**
BPO / Karajan
HMV ASD3431 © (£3.99)

You don't lightly knock a HMV recording made by Karajan and the Berlin Phil, but this issue of music by Debussy and Ravel owns to some curious flaws. It is not a question of the playing, which is, as ever, superb, nor of the reproduction, nor—or not terribly seriously—of the interpretations, though one may hold reservations about the conductor's way with the two French composers. It is the balance which from time to time sounds so eccentric. Karajan, however, must be assumed to have bestowed his imprimatur upon it, for he takes the keenest interest in the whole process of recording and is nothing if not a perfectionist.

Fortunately, there is nothing amiss with the *Prélude à L'Après-midi d'un Faune*, given a very beautiful, richly sensuous, if well-padded performance under concert-hall conditions. Ravel's *Bolero* is more problematic. The choice of tempo and the controlled intensification are both masterly—though it has an unusually long fuse—but with the big switch of key towards the end, the side-drum becomes so prominent that it batters everybody else off the platform. What the rest of the orchestra is up to at the end remains a mystery. Even those sickening trombone swoops are drowned. Similar difficulties recur in *La Mer*, where the big Berlin sound, gorgeous as it is, reduces details to vanishing point, and once the heavy brigade of fruity, almost Wagnerian brass come into action during the climaxes, the strings and wind might as well pack up and go home. [B/C: 1/3]

Christopher Grier

DE FALLA: Nights in the Gardens of Spain □
Harpichord Concerto □ **Concerto—piano version**

Joaquin Achucarro (pno/hpd) / LSO / LSO principals / Mata
RCA RL31329 (£3.99)

In his sleeve note—inadequately translated, and with various inconsistencies with the French equivalent—Achucarro explains that de Falla himself used to programme the Concerto twice, as here, with pianoforte instead of harpichord. Faster tempi are possible with the former, but certain scoring details can only be realised on the more 'melodic' instrument. Both performances are pungent, and forwardly balanced for maximum bite. In intensity this new version mirrors RCA's recent Erato reissue of the Veyron-Lacroix/Dutoit; in the Kipnis/Boulez (CBS) the approach is lighter, more relaxed and Gallic. Charles Gerhardt has secured superior sound for Achucarro, and the LSO players set the highest standard of accompaniment.

Those who have dismissed *Nights in ...* as wishy-washy stuff will have to think again, when they encounter this superb new version, which is crisp and logical. Incidentally, this is Eduardo Mata's recording debut. Piano and orchestra are beautifully balanced, and scoring details emerge fresh as paint. The dynamic range is wide—perhaps overpowering at climaxes, but worthy of 'star' rating. An outstanding disc, especially recommended to anyone as yet sceptical of this composer's attractions. [A/A*: 1*]

Christopher Breunig

WILHELM FURTWÄNGLER CONDUCTS THE BERLIN PHILHARMONIC

BACH: Suite No. 3 in D Major / HANDEL: Concerto Grosso in D Major Op. 6, No. 5 □ **Concerto Grosso in D Minor Op. 6, No. 10**

BEETHOVEN: Piano Concerto No. 4 in G Major Op. 58 □ **Leonora Overture, No. 2, Op. 72**

SCHUMANN: Symphony No. 4 in D minor, Op. 120 □ **Manfred Overture, Op. 115** / **WEBER: Euryanthe Overture, Op. 81**
Conrad Hansen (pno) / BPO / Furtwängler
DG 2535 806, 807, 805 (£2.59 each)

The earliest of these recordings is the Beethoven Piano Concerto No. 4 in which the soloist was Conrad Hansen, a pupil of Edwin Fischer. This dates from 1943, and although the performance is generally admirable the technical quality of these transfers will probably prevent all but the most devoted admirers of Furtwängler from acquiring them. The treble is so hard that the strings have taken on a steely quality which is certainly uncharacteristic of the Berlin Philharmonic. In fact the quality of the transfers generally is unsatisfactory. In the Bach Suite No. 3 the opening movement is recorded at a very high level and the resultant sound is coarse and sadly lacking in definition and transparency. The best of these discs from a recording point of view is DG 2535 805 and I would recommend this to those music lovers who would like to sample the conducting of Furtwängler but who do not wish to purchase all three discs. I wish I could be more enthusiastic about these records, but while the playing of the orchestra and the conducting of Furtwängler are of a very high standard the quality of the dubbings makes appreciation of the music very difficult. [H: 1]

John Freestone

'GERMAN ROMANTIC SONGS'

Lieder by Brahms, Franz, Loewe, Mahler, Mendelssohn, Pfitzner, Reger, Schubert, Schumann, Strauss and Wolf
Elly Ameling (sop) / Dalton Baldwin (pno)
Philips 9500 350 (£3.99)

Only the very loosest definition of German Romanticism could embrace this very varied programme of songs, but then only the driest of pedants would worry about that for a moment once he had lowered the stylus on the first of them. The eighteen examples range chronologically from Schubert and Loewe (the interesting setting from his opus 43 of Goethe's ballad about the fisherman and the watersprite) on to early Pfitzner and Richard Strauss, and in scope from little folksong recreations by Brahms and Mahler to larger-scale lieder. Since the two quite generously filled sides are banded, it is a simple matter to find one's own particular favourites among these fine performances—though not one is without sterling merits. There is a winning charm to the lighter-hearted pieces (Wolf's 'Der Gärtner', or Mahler's 'Ablösung im Sommer' with its cuckoo), a beautifully-sustained line in Schubert's 'Du bist die Ruh', sensuous warmth in Schumann's 'Der Nussbaum', finely controlled tension in Strauss' 'Allerseelen'. Baldwin is Ameling's sensitive and assured partner, and the clear, unobtrusive recorded quality and silent surfaces are further virtues. Since a number of the songs are not in the current catalogue, and indeed of Pfitzner and Franz there is now not a single recording, the listener is likely to be meeting unknown treasures as well as some old favourites. Printed song-texts will accompany the useful historical introduction that is printed on the sleeve. Strongly recommended. [A: 1]

Peter Branscombe

'SALUTE TO PERCY GRAINGER', Vol. 2

Anna Reynolds (m-sop) / Peter Pears (ten) / John Shirley-Quirk (bar) / Wandsworth Boys' Choir / Linden Singers / ECO / Bedford
Decca SXL 6872 (£3.99)

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Can we not salute without abandoning a sense of proportion? To refer to Grainger's 'wide ranging genius', as the sleeve-note does, is little short of absurd; his was a limited talent—limited in its effective range, that is—accompanied by much enthusiasm and an undeniable flair. In the folk-song field Grainger made a distinctive contribution both as collector and arranger: this, surely, is the best of him. All the items on this record are folk-song arrangements, some for solo voice, some choral, and others purely instrumental—mostly for strings. There is indeed a pleasing variety, including a transfer of a 1927 recording of *Country Gardens* played by Grainger himself. The other items are *Molly on the Shore*, *Shenandoah*, *Under a Bridge*, *Dollar and a Half a Day*, *The Merry King*, *Six Dukes Went Afishin'*, *Stormy*, *Irish Tune from County Derry*, *Brigg Fair*, *Green Bushes*, *The Three Ravens*, *Died for Love*, *The Power of Love* and *The Hunter in his Career*. There are some excellent performances, those involving soloists and chorus being particularly pleasing. The recording, too, is of a high standard, but in some items the closeness can be off-putting. [A: 1] *Hugh Ottaway*

FAMOUS GUITAR MUSIC: Albeniz / Lauro / Sagrares / Sor / Tarrega / Villa-Lobos
Pepe Romero (gtr)
Philips 9500 295 (£3-99)

Recitals of the 'gems from' type usually provoke a groan from this reviewer; but this record is different. It is true that some of the pieces are very well known, but none is poor, and none is a pure display of virtuosity. There is, heaven knows, plenty of that (such as the tricky bits of Villa-Lobos' *Prelude No. 1*, of which you will have to seek far for a better technical performance) but it is always accompanied by a sensitive care for the music, so that what might be simply a concert war-horse becomes a new exposition. In general, I find this the most satisfying example of Pepe Romero's art that I have so far come across: it is bound to enhance his already great standing. Musically, the most interesting items are those by Sor: his 'Introduction and Variations on a Theme by Mozart' and 'Sonata in C, Op. 15', but everything makes its own contribution, and lovers of the instrument should not miss this record. Judged purely on the instrumental sound, this is also an excellent recording, full of life, natural and delicate. But there is, in my room, a curious instability about the image, in which treble and bass are sometimes spatially separated, so that though the sound is natural, its projection is not. One can, of course, ignore these effects, but they have to be noted for critical purposes. Do not be put off by what is a minor criticism of an otherwise outstanding issue, in which artist and engineers must have great satisfaction. [A: 1/1*]

Peter Turner

HAHN: Si mes vers avaient des ailes □ Réverie □ Les cygnes □ Quand je fus pris au pavillon □ Nocturne □ Trois jours de vendanges □ Offrande □ L'enorédulé □ Le Printemps □ A Chloris □ Les étoiles □ Mai □ Fêtes galantes □ Seule □ Sérénade □ La Barcheta □ L'avertimento □ Sopra l'acqua indormenzada
Francis Loring (bar) / Paul Hamburger (pno)
Meridian E77005 (£2-99)

The songs of Reynaldo Hahn (1875–1947) have a melodic charm and lightness of texture that one would expect of the composer of such pleasant operettas as *Ciboulette*. A song like 'Réverie', with words by Victor Hugo, would not be out of place in French cabaret and his most popular song 'Si mes vers avaient des ailes' might be described as 20th century

Mendelssohn. Their lightness keeps them out of the repertoire of most Lieder singers, but there is no denying the craft and skill in the writing or his perceptive setting of words. Hahn worshipped Mozart above all composers (and wrote a pastiche operetta on the subject). Although the songs mainly come from the 1890s they have a modern spirit about them. The note writer compares Hahn to Sullivan, but they are much less Victorian than Sullivan's songs: something of the future spirit of Kern slips in. None of them needs heavy treatment or a heavy voice and Francis Loring proves ideal. He has a soft tone and a calm equanimity of approach with an intelligent regard for the sense of the poems. At times he almost croons, an approach which suits many of the songs and adds to the cabaret flavour. Paul Hamburger follows suit and plays in a gently swinging, rhythmic style, an ideal partner. Many who might expect another stern dose of Lieder might well find this record an unexpected pleasure. I commend it highly to anyone whose musical appreciation is not confined to high seriousness and solemnity. The recording is clear and well-balanced, and not a word is lost, but the sound is rather close. An occasional vocal wobble is all that deprives this issue of an unreserved star. [A: 1*/1]

Peter Gammond

HAYDN: Symphony No. 103 in E♭, 'Drum Roll'
□ Symphony No. 87 in A
Concertgebouw / Davis
Philips 9500 303 (£3-99)

Last April I welcomed Colin Davis' coupling of Haydn's 88th and 99th symphonies; this time he couples arguably the most marvellous of all the London works with (numerically) the last of the Paris set. The earlier piece is given a straightforwardly attractive performance—lithe, spirited and clean-toned, Davis being prepared to let Haydn's music make its own surprises, which of course it is ideally able to do. The 'Drum Roll' more obviously carries the mark of its interpreter, with a restrained, sinister crescendo from silence at the beginning, an unusually slow (but finely sustained) tempo for the first Adagio, and an almost savage attack in the minuet (the trio provides the happiest of contrasts, with those simple yet telling clarinet phrases). A grand performance all round, with each detail telling, though without unnatural highlighting. Towards the end of the 'Drum Roll', a long work, the sound grows slightly shallow, harsh; elsewhere the quality has that full, natural, silent-surfaced quality of so many Philips recordings, though the bass-line is heavier than normal. Some listeners may find details in these performances questionable (forceful accentuation and articulation with ornaments), but the orchestral excellence and the stylish sweep make them very attractive. [A/B: 1]

Peter Branscombe

HAYDN: The Seven Last Words (original version)
ASM / Marriner
HMV ASD 3451 (£3-99)

Over the last ten or twelve years there have been a large number of recordings of this noble and searching work, most of them, like Marriner's new issue, offering the original orchestral version, but recordings of the string quartet transcription are still available from the Amadeus and Aeolian Quartets, and last autumn John McCabe included the piano transcription in the fifth volume of his Haydn keyboard series. Of all the orchestral versions, only Munclinger's, made with the Prague CO in 1971, survives—a good bargain, but now eclipsed by as glorious and powerfully

sustained a performance as we can ever hope for. The recorded quality is fully worthy of the work and its reading, provided the patches of rough quality early on the second side of my review copy are not allowed to disfigure the final pressings. The dynamic range is wide (Marriner justifiably augments Haydn's markings occasionally), the sound-quality even and with perspective. Some listeners might wish for greater prominence for the winds, but the details are all there within the often intricate textures. The playing is as lovely as we have come to expect from the Academy, with warm yet never sentimental string tone and delicate yet firm rhythmic control. But the last word must go to Haydn, who rises superbly to the challenge of writing eight consecutive slow movements of the greatest beauty and intensity, and then rounds off the work with a depiction of the earthquake that must have been shattering to an audience in the late 1780s, and that in a performance as lively and dramatic as this can still inspire awe. [A: 1]

Peter Branscombe

d'INDY: Symphony on a French Mountain Song, Op. 25 / SAINT-SAËNS: Piano Concerto No. 5 in F Major, Op. 103 ('Egyptian')
Aldo Ciccolini (pno) / Orchestre de Paris / Baudouin
HMV ASD 3480 (£3-99)

Though I cannot agree with the writer of the sleeve notes for this record that the 5th literally 'teems with rhythms and modes borrowed from the East', there is no doubt that this version exploits to a greater degree than the Tacchino/Luxembourg/De Froment recording reviewed previously, the Orientalisms that overlie this work. Ciccolini is an adroit performer who takes charge of the piece right away and has the sympathetic response and support of conductor and orchestra all the way, which is an absolute necessity with any of the Saint-Saëns piano concertos.

Vincent d'Indy was born into a family of land-owning nobles in the mountainous Ardeche district of France and from there imbibed the melodies and rhythms which he was to put to such beautiful use in this symphony. Alternatively known as the *Symphonie Cèvenole*, since it uses as its main theme a folk song popular in the Cévennes mountains, it is so expressive of the region that if it were not for its symphonic divisions, it would be better described as a tone poem.

The ascent of rocky crags, mountain pines swaying in the wind, icy streams throwing off sunlight as they tumble down to the valleys have all been translated into musical terms and laid out before us in an exhilarating journey. Listening to it again makes me wonder why d'Indy's music is still only appreciated by an enthusiastic few, instead of an equally enthusiastic many.

Although there are no strictly solo voices in the symphony, Ciccolini takes care, quite rightly, to see that his piano is never dominated by the orchestra, and this way makes sure that our guide on the journey never gets lost in the scenery. [A/B: 1/2]

Oliver Cambren

KETELBEY: In a Persian market □ In a monastery garden □ Chal romano □ In the mystic land of Egypt □ The Clock and the Dresden Figures □ Bells across the meadow □ In a Chinese temple garden □ In the moonlight □ Sanctuary of the heart
Vernon Midgley (ten) / Jean Temperley (sop) / Leslie Pearson (pno) / Ambrosian Singers / Philharmonia / Lanchbery
HMV ASD3542 (£3-99)

Albert W. Ketèlbey (1875–1959) has never received the 'classical' seal of approval, as

many light composers of no greater talent have. That simply leaves him as one of the best and, once, most famous of our composers of light music. Perhaps, like all best-selling articles, his music sometimes verges on vulgarity; but this is because of its shameless romanticism, its blatantly melodic tunes, its lush harmonies—all saved from damnation by the sheer professionalism of their composer. On this disc Ketèlbey is given the ultimate in lavish treatment, not only the birds and bells which most recordings afford but a good chorus to join in where he made it an optional luxury, soloists for two items to sing Ketèlbey's own words, a pianist for the lively *The Clock and the Dresden Figures*. All the old favourites are here but I found myself particularly attracted to the comparative understatement of *In the moonlight* which has a fine melody. The quadraphonic recording is ever so slightly over-lush in stereo but it is still a fine warm sound, while Lanchbery and his considerable forces interpret Ketèlbey with the right degree of tasteful fervour, full-blooded readings without over-stepping the mark; definitive Ketèlbey in 'classical' terms. [A: 1*]

Peter Gammond

LISZT: Sonata in b / SCHUMANN: Fantasie in C, Op. 17

David Wilde (pno)
Saga 5460 (£1.75)

This is a clear and vigorous performance of the Liszt sonata, played apparently from a facsimile of the original MS, though David Wilde does take some liberties here and there: for instance, in bar 141 he does not take up the original tempo, as marked, and only comes back to it gradually. But this is a performance which can well stand up to those of many famous international pianists, and Wilde certainly has the technique to cope with the most difficult problems. He is also extremely sensitive in the quieter passages, and the fugue is neatly played. Perhaps he is less grandiose than Lazar Berman, but this is a very well worked-out performance. His coupling of the Schumann Fantasie (also based on the original manuscript)—the two composers dedicated these works to each other—duplicates that of Alicia de Larrocha on Decca, reviewed here recently. David Wilde plays the Schumann with great sensitivity, and also with fire, as in the final pages of the second movement, where the music really seems to take off into the air. But Seifora de Larrocha is more powerful on the whole, and gives a stronger performance: for instance, after the final climax of the last movement she keeps up the *forte* tone to the end, as marked in my edition, whereas David Wilde goes down to *piano* and then comes up again. But her performance of the Liszt sonata is nowhere near as accomplished as David Wilde's, so I imagine that choice will be governed by this. The recording is excellently clear, and the cheap price of David Wilde's record makes it a bargain. [A: 1]

Humphrey Searle

MAHLER: Symphony 1 in D

Boston SO / Ozawa
DG 2530 993 (£4.35)

The Boston Orchestra recorded this work under Leinsdorf—a not very successful RCA release—but Mahler 1 makes an interesting choice for its Japanese conductor. The reading is meticulous in detail, both repeats observed, every change in pacing followed, every strand of the texture cleanly defined (partly due to the complex miking arrangement clearly in use). Objectively it would be hard to fault the performance.

But for me it does not work. It lacks warmth; the parodistic elements are played absolutely straight—the string glissandi at the beginning of the trio flatly denied, for instance (a rare disregard for Mahler's marking)—the section in the finale at Fig. 16 in late Mahler style, suggesting Ozawa would be at best in *Song of the Earth*. For me the music rarely flows, but has an alienating quality. A relief to turn to Giulini's singing phrasing, and deeply felt structuring.

As stated, the DG production matches the conductor's insistence upon every component detail standing exposed; some knocking of stands mars the opening, and the trumpets tend to sound piercing—I found the recording was preferable on electrostatic headphones, when the balancing seemed more acceptable than over speakers. I fear that anyone who knows this work well, and who finds Levine's reading compelling, will consider Ozawa's frankly boring. Rating reflects efficiency of the whole. [A: 1/2]

Christopher Breunig

MAHLER: Symphony 3 in d

Norma Procter (con) / Ambrosian Singers / Wandsworth School Boys' Choir / LSO / Horenstein
Unicorn RHS302/3 (2 records) (£7.98) © 1970

Horenstein's dedicated Mahler 3, one of his last recordings, was done at Croydon's Fairfield Hall in July 1970: an eight-channel production by former LSO manager Harold Lawrence and Bob Auger. Out of print for some time, it is reinstated with a new cover—fashionable Klimt replaces the charming Palmer—and a new essay by Jack Diether. The pressings are from Philips, with clean-sounding transfers cut at a lower level than my original domestic tests.

With some candour, Auger has claimed that the multi-track techniques and mix-down, with Dolby processing, here exemplified the then 'state of the art'; so with equal frankness we would ascribe the slight veiling and obvious manipulation of levels to such methods. However, the value of this Unicorn album lies in the historic importance of Horenstein's stately account of the score, which somehow preserves the spirit of a live performance. [A: 1*]

Christopher Breunig

MESSIAEN: Turangalila Symphony

Michel Béroff (pno) / Jeanne Loriod (Ondes) / LSO
Previn
HMV SLS 5117 ④ (2 records) (£7.95)

Between 1945 and 1948 Messiaen wrote a trilogy of works on the subject of love and death. In these three compositions (the song-cycle *Harawi*, the *Turangalila Symphony* and the choral pieces *Cinq Rechants*) Messiaen re-enters the myth of Tristan and Isolde. He is particularly concerned with Wagner's treatment of the story with its overwhelming Love-Death symbolism. Where Messiaen differs from Wagner is by not casting his works as dramas—rather than staging them, Messiaen takes them out of the real world and places them in a surrealist dream state. The word *Turangalila* is a combination of two Sanskrit words: *Lila* (play, sport—it can also mean love) and *Turanga* (time). The Symphony is Mahlerian in scale and density—it spans 10 movements cross-bound by various cyclic themes. However, although the spirit of the work is hugely Romantic, this spirit is garbed in complex twentieth-century technique. The combination of the two results in a work of enormous complexity—a complexity which was the logical outcome of Messiaen's development, but which could not continue and which led to simpler works during the following years.

This new recording is very welcome. Not only does it have deeply committed in-the-blood soloists for the vital Ondes Martenot (an electronic keyboard instrument finely played by Jeanne Loriod) and Piano (Michel Béroff), but the warm romantic richness of the score puts it nicely in the area of André Previn's strengths. For the performance there must be high praise. For the recording? Very nearly the same. This enormous score is difficult to balance in a live performance and on a recording it stresses recording skill and medium very heavily. Except for a fractionally thin piano sound in the 1st movement (soon corrected) and some slight congestion in some of the climaxes (despite using four sides where others have used three) it would earn an unqualified star: thus [A/A*: 1].

Benedict Sarnaker

MOZART: Symphony No. 25 in g, K183 □ Symphony No. 29 in A, K201

ECO / Britten
Decca SXL6879 (£3.99)

The release of this 1971 recording will no doubt encourage speculation about other Britten performances Decca may still have in their archives. Certainly it is surprising that they have waited so long before issuing it, particularly as the two other Mozart symphony recordings—the E♭ and G minor—were so well received. With the example of the late G minor symphony before me, I expected that the earlier would be given entire with all the repeats. It is not. Nor is the A major treated any differently in this respect from almost every other recorded performance. Both can therefore be comfortably contained on a single side. The manner of the performances do invite comment, just as Britten's earlier Mozart recordings did. For one thing he is not afraid to make the music move along, briskly if required, and both first movements are briskly played though, as one would expect, they are carefully, indeed thoughtfully, articulated. There are fewer of the expressive *ritardandi* that spoiled the other G minor performances for some, but they can still be heard. I do not find them disturbing, though. Britten's most obvious effects can be heard in the slow movements where again the shaping and the dynamics of phrases are contributory to performances which generate a positive response from the listener. To say that the Andante of K201 is meltingly beautiful as played here is not, I think, too much of an exaggeration, while the Trio of the G minor offers a regenerative interlude in the tense urgency of the Minuet. It is perhaps going too far to say that these are the greatest accounts of these two works, but they are very close to being so and anyone interested in the creative interpretation of one great composer by another should not miss the experience. Happily it is splendidly recorded. [A: 1/1*]

If there happens to be a Britten 'Jupiter'...

Kenneth Donmett

MUSIC FROM THE SLAVONIC ORTHODOX LITURGY

Boris Christoff (bass) / Choir of the Alexander Nevsky Cathedral, Sofia / Konstantinov
HMV ASD 3513 (£3.99)

It is interesting that while the Western churches experiment with new liturgical forms such as pop Masses, the Eastern churches hold firmly to their tradition and attract increasing support. That tradition, in musical terms as well as others, differs from the classical Western tradition by permitting an emotional expression which is quite alien to the austere objectivity of the Gregorian music. Furthermore, today it seems to be almost universally harmonised. This ten-

dency appears at least as far back as the twelfth century, despite the plainchant origins of the music and numerous edicts to preserve it intact. Such harmonisation, when based on the modal structure of the chant, can be sensitive and appropriate; but that is not always so. This record seems designed primarily to display the superb bass voice of Boris Christoff, who is a Slav by birth. As such, it succeeds admirably. It also gives a good idea of what the Slavonic Liturgy can sound like when performed at the highest level; but these two purposes have been allowed to conflict more than they need have: through almost the entire recording, Christoff is placed a seemingly vast distance in front of the choir, so that one has to listen past him in order to hear properly what the choir is doing. It is only in the very last item, for some reason, that a more natural perspective is adopted and we are allowed to hear the vast and rich sound of this large and superbly-trained choir. Here, I feel, an opportunity has been somewhat wasted: one can hear the great Christoff for his own sake on many other records: here we should be shown the Liturgy before all else. A double pity, for the recording is a very good one. [B: 1] *Peter Turner*

Brass Pictures

MUSSORGSKY: 'Pictures at an Exhibition'—
arr. Howarth
Philip Jones Brass Ensemble / Howarth
Argo ZRG 885 (£3-99)

This is a record for every brass collection! I am not suggesting that it will provide you with the only version of the Mussorgsky that you will need, but there is an undeniable brilliance about both the conception and the performance. No sleeve-note was available at time of going to press, so I cannot be sure of the complete resources, but this is an arrangement for brass and percussion—one of quite extraordinary ingenuity and effectiveness. My initial scepticism—'The Gnome' and 'The Old Castle' are probably the least successful movements—was soon overcome, and the further I went, the more I was persuaded. Even the spectral variant of the 'Promenade'—the movement headed 'Cum mortuis in lingua mortua', for which strings might be thought indispensable—comes off, and it does so by re-creating the atmosphere in terms peculiar to the brass. Elgar Howarth, whose arrangement this is, gets some superbly controlled playing from the Philip Jones Brass Ensemble: unquestionably a starworthy performance, even by their standards. The recording likewise merits a star, for in addition to admirable balancing and tone, it reconciles immediacy and comfortable distancing and achieves some very telling perspectives. [A*: 1] *Hugh Ottaway*

Late News: Philip Jones has recently signed a new 3-year exclusive contract with Argo. Long may he blow his own trumpet!

ELENA OBRAZTSOVA: Operatic Recital
Arias from: Adriana Lecouvreur* / Carmen* / Cavalleria Rusticana* / Don Carlos** / Il Trovatore** / Samson and Delilah*
Elena Obraztsova (m-sop) / Philharmonia / Ambrosian Opera Chorus / Patané* / Stapleton**
HMV ASD 3459 ④ (£3-99)

Obraztsova has been a leading member of the Bolshoi for some years, and has appeared with considerable success at La Scala Milan and the Metropolitan Opera New York, as well as at Covent Garden. She sings all these arias with dramatic conviction but the voice

lacks the sensuous beauty of tone necessary to give an aural impression of such a seductress as Delilah, and the vibrato is at times too prominent. Similarly her Carmen is unsubtle and she lacks the voluptuous beauty of voice which would make her characterisation entirely convincing. She is better in the more dramatic arias and is admirably supported by the Philharmonia Orchestra and the Ambrosian Opera Chorus. An anonymous tenor sings well in the 'Seguédille' from *Carmen* and 'Condotta ell'era in ceppi' from *Il Trovatore* but unfortunately does not appear at the conclusion of 'Mon coeur s'ouvre à ta voix' which ends rather tamely without the final bars which form the climax of the whole scene.

The recording is only fair, and the balance is faulty at the commencement of the aria from *Adriana Lecouvreur* where the orchestra almost swamps the singer. A leaflet is included giving texts and English translations of the arias. [B: 2] *John Freestone*

OBRECHT: Missa Fortuna Desperata
Clemencic Consort
Harmonia Mundi HM 998 (£3-99) (Rediffusion)

The Clemencic Consort, relative newcomers to English ears, consists here of four male voices and an instrumental ensemble. It is a moot point, and one of the most difficult questions surrounding the performance of Renaissance choral music, whether or not instruments should be added and if so how. When should cornetts and sackbuts be added to the voices, and how 'authentic' are those performances which effectively orchestrate a piece by sometimes changing instruments or leaving them in some sections while replacing the voices altogether in others? The issue is hardly decided, but there is a growing body of opinion to support the idea that instruments were not used in liturgical ceremonies in the late fifteenth and early sixteenth centuries, and so this recording is taking a rather unfashionable and increasingly untenable position. On purely musical grounds it is not a persuasive advocate for instrumental participation either. The consistently loud tone and insistent character of the performance blunts the detail of the music rather than enhancing it, and the singing often has an inappropriately rustic quality to it, perhaps conditioned by the timbre of the accompanying instruments. Speeds are too brisk to allow the music to speak properly, and phrases tend to be delineated with heavy-footed accents in an irritatingly mannered fashion. It is good to have this music on disc, together with the Busnois chanson on which Obrecht's mass is based, but there is room for another view. Well recorded. [A: 2/3] *Iain Fenlon*

POULENC: Mass in G □ **Exultate Deo** □ **Salve Regina** / **PEETERS: Missa Festiva, Op. 62**
St. John's, Cambridge / Guest
Argo ZRG 883 (£3-99)

To Poulenc music equated with melody, and in writing he went where the mood took him, generally expressing this in whatever mode seemed the most suitable. Although the Mass in G relates in its more austere moments to the more formal styles of church music, there are in it hints of the brilliant 'Gloria' that was to follow twenty years later.

These same hints are to be found in the *Exultate* and *Salve Regina* which are so beautifully and elegantly unadorned that the *Gloria* is in danger of seeming overdressed in places.

Flor Peeters is the author of a number of learned treatises on early church music

including 'A Practical Method for Accompanying Gregorian Chants', and the composer of many pieces which illustrate his experimentation with this form. The 'Missa Festiva' is the first of his compositions which I have come across on record, and I hope that there will be more.

The sonorous line of the Gregorian chant is used as the foundation and departure point for a number of excursions into the territory of dissonance, without, curiously, losing the basic tenor of the style.

The Choir is in superb form and serves as a reminder, if one is needed, that the human voice is still the supreme musical instrument. [A: 1] *Oliver Cambren*

POULENC: Concerto in g for organ □ **Concert Champetre for Harpsichord and Orchestra**
Simon Preston (org and hpd) / LSO / Previn
HMV ASD 3489 ④ (£3-99)

This version must supersede the excellent one by Maurice Durufle, if not for Preston's organ playing, then for Previn's instinctive grasp and exploitation of the piece's innate theatricality.

Perhaps even more wildly eclectic than the Organ Concerto, the Concert Champetre is a joy to listen to. Supposedly an attempt to capture the rustic atmosphere of the forests of Saint-Leu, there are none of the sylvan overtones that Ravel would have found there. The woods in this case are the scene for some rollicking *Scaramouchian* encounters, all taking place at silent-movie speed and underscored by the harpsichord. Anything less like the contemplative atmosphere which Diderot and Rousseau are supposed to have found there I cannot imagine.

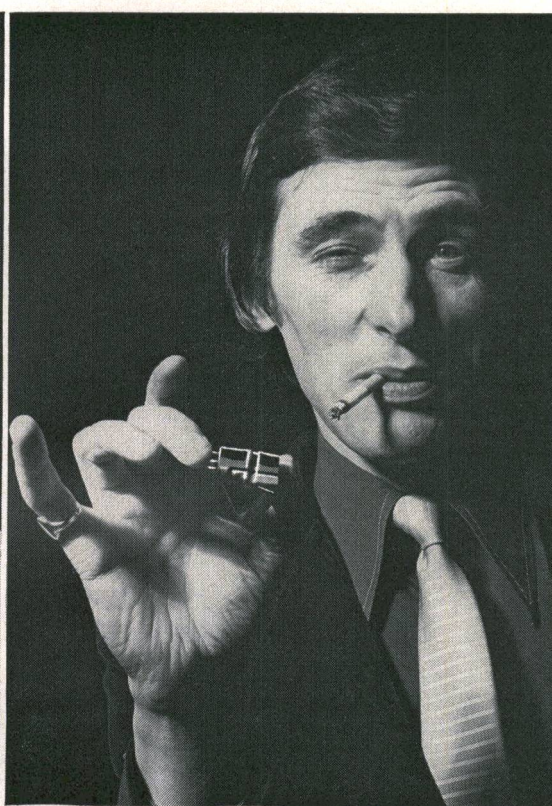
Simon Preston's keyboard work is brilliant, the LSO are in superb form and Previn's conducting is incisive. Full marks all round. [A: 1] *Oliver Cambren*

PROKOFIEV: Symphony 3 in c, Op. 44 □ **Scythian Suite, 'Ala and Lolly', Op. 20**
LPO / Weller
Decca SXL 6852 (£3-99)

Never loth to adapt and utilise, Prokofiev made his Third Symphony (1928) out of the opera *The Fiery Angel*. Indeed, the symphonic project was in the nature of a salvage operation, carried out when the opera seemed to have little chance of being produced. Stylistically, this music embraces something of both the old and the new Prokofiev—the western 'playboy' and the future Soviet citizen—and the level of invention is generally high; but it remains theatre music, willed into symphonic form. Weller and the LPO give a very persuasive performance, unforced and well finished, and their *Ala and Lolly* is notable for the extent to which Debussy rather than Stravinsky shines through. Most of the recording has a satisfying wholeness, there is an excellent dynamic range and the presence is pleasing in a smallish room. Well worth considering. [A: 1] *Hugh Ottaway*

PURCELL: 'Dido and Aeneas'—ed. Britten and I. Holst
Burrowes / Lott / Baker / Hodgson / Pears, etc / London Opera Chorus / Aldeburgh Festival Strings / George Malcolm (hpd) / Bedford
Decca SET 615 (£4-25)

Since there is no known autograph score, *Dido and Aeneas* will always come to us in someone's edition. The most familiar is the one made by E. J. Dent more than 50 years ago, and the main differences between that and Britten's 1951 edition are in the realisation



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of the continuo part and the end of Act II. Following the Tenbury and other MSS., Dent terminated Act II with Aeneas' soliloquy, 'But ah! what language can I try'; but the original libretto provides for three more numbers: a further trio for the Sorceress and the Witches, a chorus and a dance. Whether Purcell omitted these is not known, but it is very unlikely that he would have ended an act 'out of key' and with a solo. Britten decided to restore the missing numbers, taking the music from *The Indian Queen*, the last of the Welcome Odes and an overture to some incidental music. This practice has since been followed by others, with different music: for example, the Mackerras version on Archiv 198424.

For this Kingsway Hall recording made in 1975, an outstanding team was brought together under Steuart Bedford's sprightly direction. Sprightliness and zest are certainly characteristic; tempi are generally brisk—only in two numbers perhaps unduly so—there is a splendid lift and rhythmic animation, and for the most part a seemingly effortless distinction at all levels. Janet Baker's Dido, though pleasing and truly felt, is not, perhaps, one of her more memorable performances. This is, however, a recording I could live with, so abundant are its musical virtues. The recording itself combines spaciousness, presence and a discreet emphasis on the excellent continuo work of George Malcolm and Kenneth Heath (cello). One or two of the choruses might have been cleaner and more naturally integrated; otherwise very successful on all counts. Warmly recommended. [A: 1*] *Hugh Ottaway*

de Waart's Rach 3rd

RACHMANINOV: The Rock, Op. 7 □ **Symphony 3 in a, Op. 44**
Rotterdam PO / de Waart
Philips 9500 302 (£3.99)

If the opening of the adagio from the third symphony—solo horn with harps, solo violin, then a short soaring passage for strings—serves as a test of Rachmaninovian sympathies, then Edo de Waart emerges with flying colours. (Incidentally, compare the later scoring with Sibelius' scherzo from the sixth symphony.)

It seems to me that de Waart not only has feeling for the passionate introspective writing, but for the delicacy and brilliance of the relaxed scherzando elements (this middle movement merges both). He is more urgent than Previn, in the finely played LSO alternative on HMV—closer, in fact, to the composer's own 1939 recorded performance with the Philadelphia Orchestra (RCA ®).

What is rewarding here is the certainty that the Rotterdam players know this music well; the playing is well-rehearsed and confident, glowing and expressive. The EMI production was starred in QM (Jan '78), but the Dutch recording is even finer: nicely recessed, perfectly natural in effect (though with headphones you can hear the odd intake of breath, confirming the proximity of mikes), expanding beautifully at climaxes, and without that hardening, or thinning, that marks out stereo/SQ transfers. And, of course, the coupling is preferable to Previn's *Aleko* fillers. [A*: 1*] *Christopher Breunig*

RAVEL: Bolero □ **La Valse** □ **Alborada del Gracioso**
L'Orchestre National de France / Bernstein
CBS 76513 (4) (£4.29)

In the Berlin Philharmonic version of *Bolero* (p. 121), the side-drum dominates and ultimately overwhelms the orchestra. Bernstein and the Orchestre National de France take a different line. To start with, the side-drum ostinato is barely audible, and it never becomes so relentless or so noisy as the Berlin one, whereas if the French orchestra develops proportionally a bigger sound, it is also more raucous and the solos are more pungent and inflected. I would imagine it was closer to what Ravel had in mind, if he could be persuaded to deliver a posthumous opinion on a work he considered a pot-boiler.

Alborada del Gracioso is given a bright, very brilliant performance—with fairly close-up reproduction—crisply articulated and with wind and brass well to the fore. Since that last feature is common to a lot of current French orchestral recordings, its recurrence in *La Valse* is to be expected. Bernstein makes the most of the music's ominous flavour and its contrasting levels of dynamics and textural densities, but encourages the timpani to explode like cannon fire. Whereas the climax is, for instance, fast and furious, it is also a bit of a muddle acoustically. [B: 2]

Christopher Grier

REGER: Toccata and fugue in d/D, Op. 59, Nos. 5 & 6 □ **Fantasia on 'Hallelujah! Gott zu loben'** □ **Fantasia on B.A.C.H., Op. 46** □ **Benedictus, Op. 59, No. 9**
David Sanger (org)
Meridian E77004 (£2.99) (Selecta)

Meridian is another newcomer to the ranks of the small independent companies, now swollen into quite an army!

Reger's heavily blackened pages may not appeal universally, but he unquestionably represents an important pinnacle of the romantic era. All the music here comes from a mere three-year span, beginning in 1898. It is rendered with impressive virtuosity by David Sanger, and his skill in retaining clarity in the thickest textures is only rarely beaten by a decidedly lively acoustic.

The organ of St Jude, Hampstead has not appeared on record before, to my knowledge, and is well enough suited to the job in hand. Reger wrote for large instruments well provided with mechanical 'goodies', including crescendo pedals, but Sanger sidesteps the lack of this now discredited device with neat suavity. Reproduction is smooth and clean, with ample deep pedal which has been well retained in cutting. A good balance has also been achieved in a none too easy situation—if Meridian can keep up this quality, they should win deserved popularity. [A: 1]

Trevor Attewell

Quo Vadis Indeed?

ROZSA: 'QUO VADIS?': Selections from the original motion picture score
RPO and Chorus / Rozsa
Decca 'Phase 4' PFS 4430 (£3.79)

Quo Vadis? was Rozsa's first historical film assignment and marked a new approach to the scoring of motion-pictures. Too many

composers faced with this sort of task took one of two ways out: either they pilfered from the music of the classical composers, or they resolved the problem by adopting the view that people and situations were much the same then as now, and wrote music accordingly. The results varied from the abysmal to the good, but in all cases were inept (witness as one of the later examples Tiomkin's *Fall Of The Roman Empire*—good music, but not *Roman* music).

Rozsa's integrity allowed him to settle for neither approach, which is why his researches unearthed music which in *Quo Vadis?* is heard for the first time since the 1st century AD, as well as Rozsa's own compositions fashioned after these models and adapted for a modern orchestra. Rozsa literally created a new musical voice for the historical epic, and it is this 'neo-archaic' sound which has made him the undisputed master of the genre.

As artistic integrity in film-making has now vanished in the face of rampant commercialism, it is an added pleasure to listen to this record and be reminded of what could be achieved by composers whose hearts were in their work and not in the market-place.

The film was good: the music superb and far more important. While it is impossible (as with *Ben-Hur*) to do full justice to the score on one record, (hint to Decca: don't be so stingy, try two records. Your faith will be rewarded) the main themes are represented, and some of the dramatic episodes.

The Royal Phil go hand in glove with Rozsa and give a beautiful performance, and the acoustics of the Kingsway Hall give a slightly darker timbre to the resonance that ideally suits the music.

What more can I say, except . . . [A*: 1*]!
Oliver Cambren

THE ROMANTIC ENGLISHMAN

Glees, songs and part songs, 1750-1900 by Spofforth, Walmisley, Webbe, Horsley, Goss, Beale, Battishill, Phillips, Hatton, Bishop, Parry, Stainer, Benedict, Pearsall, Sterndale Bennett, Molloy and Sullivan
The Hilliard Ensemble
Meridian E77002 (£2.99) (Selecta)

The new Meridian label, nicely sleeved and priced, should find a niche for itself if it continues with issues as enterprising and entertaining as this one. An examination of the English glee and part song is a rare event and it incidentally brings many neglected composers to light, as the heading above will reveal. The glee had its vogue from the middle of the 18th century; clubs were formed and annual prizes offered in the equivalent of the Eurovision song contest of the day. The glee, less ambitious and less contrapuntal than the madrigal, is more or less the equivalent of the barbershop quartet (see the 'Light' section), usually four voices in close harmony, top line taking the melody. The part-song was an extension of this with parts that could effectively be sung with more than one voice. The glee was an English creation and composers of the time seemed to have held it in limitless esteem and written them with a Tin Pan Alley fervour. There are some delightful pieces here, starting with Spofforth's well-known 'Hail, smiling morn' and Sullivan's 'The long day closes'. By way of light relief is 'Tomorrow will be Friday' by Molloy—the composer of 'Love's old sweet song'. Stainer, Benedict, Sterndale Bennett, Bishop, Parry, Hatton—all once revered names in musical circles are interestingly represented. It's a delightful programme sung with that joyful professionalism that marks so many of the fine young vocal groups we have around at the moment. Never a dull moment and given

a commendably clear and crisp recording almost worthy of a star. [A: 1*/1]

Peter Gammond

ROSSINI: Overtures: 'Guillaume Tell' □ 'Le siège de Corinthe' □ 'La Cenerentola' □ 'La gazza ladra' □ 'Semiramide' □ 'Il viaggio a Reims'

ASM / Marriner

Philips 9500 349 (£3.99)

This disc completes the roundup of the popular Rossini overtures (with an odd rarity thrown in) so admirably started on the first set by the Academy (6500 878). The rarity here is *Il viaggio a Reims*, a typical Rossini overture in every way undeserving of its neglect, from one of his later operas dated 1825. The other items are all familiar and frequently recorded. The main concern here is whether the present issue is a strong competitor to all its rivals. As we might expect, from these forces, the answer is a firm 'yes'. Marriner shows his usual vitality, rhythmic liveliness, clarity of detail and ability to convey the gaiety of these melodic pieces. In some respects the present disc is not quite as perfect as the previous issue. This is partly due to a recording which is excellent at the more refined moments but is inclined to get harsher and thicker at the climaxes. This gives the impression, as at the beginning of *La gazza ladra*, that the orchestra is losing detail; but I think the recording is to blame. It has a slight boxiness about it. Otherwise these are commendable versions and should cause no disappointment to the purchaser. [A/B: 1]

Peter Gammond

SCHUBERT: 4 Impromptus, D899 □ 4 Impromptus, D935 □ 3 Impromptus, D946 □ 6 Moments Musicaux, D780

Jörg Demus (pno: Conrad Graf 1839)

Harmonia Mundi 29-22062-1 (2 records) (£5.98) (Rediffusion)

This is the sort of issue which puts the reviewer in a state of disarray. As, in most matters, I am all for authenticity, I am therefore sympathetically inclined toward an issue which goes to the trouble of finding a Viennese Conrad Graf piano of 1839 which Schubert could have used had he lived for a dozen more years so that we can hear his music more or less as he would have heard it. But I am also of the 20th century and not greatly charmed to have a couple of hours of my favourite Schubert played on an instrument of such hardness of tone and unyielding nature that it would cause immediate friction with our piano tuner. It is of interest to hear one impromptu in such terms but I will secretly listen to the rest played with anachronistic warmth on a modern Steinway. My admiration for Jörg Demus as a Schubert interpreter remains unshaken and these are sensitive performances only deprived of their inherent warmth by the instrument (which you gradually become more attuned to). Very much an issue for the connoisseur of authentic sounds and, from that standpoint, to be rated [A: 1]. Sleeve-notes are in French.

Peter Gammond

SCHUBERT: String Quintet in C, D956

Melos Quartet Stuttgart / Mstislav Rostropovich (vlc)

DG 2530 980 (£4.35)

One has to own immediately to the feeling that with about ten other versions available, and at a cost of £4.35, it had better be good. And, let me assert right away, this one is good, very good indeed, a rapt, attentive, inspired performance. Schubert's Quintet imposes an almost unique problem in that an extra cellist has to be added to an established

quartet. The greatness of the Casals-dominated version (CBS 61043) lies in that it was a gathering of five equals. Casals certainly set the tone; the others rose to his bidding. Here Rostropovich joins a well-knit quartet and there is just the vaguest sense, at the beginning, that as an older and famous musician he occasionally tries to pull things in his direction. Eventually it is Rostropovich who bends his will to the collective one of the quartet and adds a rich voice to increasingly unanimous proceedings. It is also the nature of the piece that its opening is perilously balanced. The quintet settle into splendid togetherness but never lose a sense of adventure—which is the art of great chamber-music playing. This quickly becomes a superb performance that holds your attention all the way with a nicely balanced and clear recording to help the enjoyment. I am not allowed the space for detailed comparison. I will simply say that I would not like to be without the Casals reading or the Amadeus and the Lansdowne, Juilliard and Albern versions are all good. This new version turns out to be one of the very best. [A: 1*]

Peter Gammond

SCHUMANN: Symphony 2 in C, Op. 61 □ Overture, Scherzo and Finale, Op. 52

NPO / Inbal

Philips 6580 269 (£2.45)

I quite liked Inbal's 1972 coupling of symphonies 1/4 (now deleted); since then we have heard no more of his Schumann cycle. This Universo coupling provides an alternative to the full-priced Karajan/DG; however, by present-day Philips standards these are un-subtle productions, with strings tending to infill speaker areas and wind voices close-balanced yet not really specific in their central locations. These techniques allow you to hear that the standards of playing are just about adequate for recording purposes, but not higher. Is Barenboim's Chicago SO coupling of the symphony with the *Konzertstück* (DG) better value at £4.35? Yes. [B: 2/3]

Christopher Breunig

SCHUMANN: Papillons, Op. 2 □ 3 Romances, Op. 28 □ Kinderszenen, Op. 15 □ Blumenstück, Op. 19

Claudio Arrau (pno)

Philips 6500 395 (£3.99)

Lovers of the germinal *Papillons* are spoiled, having Arrau's superb, and entirely contrasted version, so soon after Perahia's (CBS). Recorded with a rich fullness, Arrau plays these delightful little pieces with infinite maturity—with hindsight, as it were, where Perahia's approach was more innocent and youthful. He changes the repeat scheme in No. 11, playing through from the *Piu lento* to the end twice (Perahia follows the edition printed in the *Dover* anthology). Arrau really savours the waltz rubatos, and tinges his reading with nostalgia. A probing account, technically impeccable.

Regrettably, *Kinderszenen* suffers from intense introversion; of the early part only No. 3 shows Arrau at best, and 12 is outstanding in the best of the final section, Nos 8, 10-13. Arrau's breathing is very laboured here; happily the final item, Op. 19, finds him in more relaxed form. The close balances of these well-matched 1974/1976 productions given an amplitude ideally suited to this pianist; interestingly, the April Philips Liszt recital (Brendel) illustrates a comparably excellent but entirely different approach to the technique of pianoforte reproduction. [A*/A: 1*/2]

Christopher Breunig

RUDOLF SERKIN AT CARNEGIE HALL (75th Birthday Issue)

HAYDN: Sonata in E♭, Op. 49 / MOZART: Rondo in A minor, K.511 / BEETHOVEN: Sonata in E♭, Op. 81a 'Les Adieux' / SCHUBERT: Sonata in B♭, Op. posth. D.960

Rudolf Serkin (pno)

CBS 79216 (2 records) (£8.49)

Soon after Claudio Arrau, Rudolf Serkin; both great and universally respected pianists, both 75 years of age, both celebrating, or, rather being celebrated, by the issue of special record issues.

Serkin is a modest and reticent man whose approach to his art is characterised by discipline and total integrity. His attitude is in many ways akin to that of the late Artur Schnabel. His musical range is wide, but, like Schnabel, he is thought of especially for his performances of Beethoven, Schubert and Mozart. This birthday issue carries fine performances of the Beethoven Op. 81a and the great Schubert B♭ sonata which Serkin recorded twice last year. Again, like Schnabel, Serkin repeatedly insists that every performance is unique, which leads him to some reservations about recording, which have nothing to do with the fact that he has not been well served by the process in respect of sound quality.

As the title implies, this recording was made from 'live' performances at Carnegie Hall, New York—on Dec. 14th/15th 1977. There are always technical difficulties attendant upon the recording of concerts. Musically, there is the unquestionable advantage of a complete, integrated performance of each work, and in this instance audience noises are at a commendably low level, which is not always the case, but, while piano tone is reasonably good, there is some restriction of frequency range, and a variable and distinctly audible level of background, both high frequency hiss and low frequency 'mud' which is sometimes quite disturbing, as at the start of the Schubert side 3. We suspect that some 'knob-twiddling' went on during the recording process, and, since the piano is rather under-recorded, replay at reasonable level brings up this intrusive background. Some listeners may find it necessary to adjust the balance control to centralise the instrument between their speakers. Nevertheless, no lover of pianoforte music should be without these examples of the mature art of a great musician. [B/C: 1]

B. J. Webb

SHOSTAKOVICH: Symphony 5 in d, Op. 47

Chicago SO / Previn

HMV ASD 3443 (4) (£3.99)

After the impressive Chicago/Previn Shostakovich 4 (ASD 3440—see *HFN/RR*, March, p. 147), this sequel is disappointing as a performance and as a recording. With the exception of the finale, the sound seems neither as clean nor as deep, and from time to time the engineering tends to obtrude. But it is the performance that pushes this version well down the list. Previn's basic weakness in symphonic music—a failure to articulate the structure—is more than usually marked: hear, for example, the lack of follow-through in the first movement at fig. 36—the most crucial climax. In the same movement the second subject is unconvincingly slow; the string music at the beginning of the *Largo* drags for want of a positive current—and so on. The casually-written sleeve note seems to revive the fiction that the completion of the fourth symphony preceded the Party onslaught of January 1936. In fact, the Fourth was completed in May '36 and withdrawn in December. [A/B: 2]

Hugh Ottaway

SHOSTAKOVICH: Symphony 14, Op. 135
Zara Dolukhanova (m-sop) / Yevgeny Nestorenko
(bass) / Leningrad CO / Gozman
HMV 'Melodiya' ASD 3512 (£3.99)

So far as records are concerned, this fascinating work goes from strength to strength. Although there are some things in it that are more memorably realised by Vishnevskaya, Reshetin, Moscow PO/Rostropovich (ASD 3090), this new Melodiya version is perhaps the most dramatic so far. I nearly wrote 'the most theatrical', for there is indeed a certain theatricality in the recording style, not least in the unnatural, but often telling, focusing on points of orchestral detail, the double basses particularly. In general, the effectiveness overcame my resistance to such manipulation, and the split rating is due largely to the rasping edge of the violins and soprano voice at some climaxes. This performance has the great advantage of Nestorenko as the bass soloist, and the commitment and black intensity that he brought to the *Michelangelo Suite* (SLS 5078) is similarly revealed in this spiritually-related work—a cycle of eleven songs with death as its theme. Nestorenko is well matched with Dolukhanova, who, apart from one or two very slight blemishes, rivals Vishnevskaya in dramatic and vocal authority. The predominantly black, ironic interpretation in no way precludes warmth and compassion where these are appropriate: for instance, orchestrally there is a striking warmth in the Janacek-like idea that frames 'Oh, Delvig, Delvig!'. The dry intensity of the orchestral playing is not always well served by the recording: surely the strings at the end of the work had greater impact in the studio (cf. Rostropovich). Not free from oddities, then, but distinctive as a performance and in presence. [A/B: 1*] *Hugh Ottaway*

SHOSTAKOVICH: String Quartet No. 11 in F minor, Op. 122 □ **String Quartet No. 3 in F major, Op. 73**
Fitzwilliam Quartet
Oiseau-Lyre DSLO 28 (£3.99)

Close, high-powered recording is well-nigh disastrous here. Even with a reduction in volume, the effect produced is a greatly inflated image, larger than life and with much coarsened tone. I question whether there is a true *pianissimo* anywhere on these two sides; anything above *mf* is a fierce, flaring sound of head-scorching proportions. Neither Shostakovich nor the Fitzwilliams escape serious distortion of their intentions. The signs are present from the very beginning of the Quartet No. 11: the first movement should be almost entirely *p* and *pp*; but listen to the thick, beefy line of the cello on its first entry! Not that this is only a matter of dynamics; every aspect of the musical presence is affected. Subtlety of feeling and atmosphere—the quietly lilting finale of No. 3, for example—is sadly undermined. Much distinguished playing is marred by this misconceived notion of impact. [C: 1] *Hugh Ottaway*

Karajan's Sibelius 4th

SIBELIUS: Symphony 4 in a, Op. 63 □ **Tapiola, Op. 112***
BPO / Karajan
HMV ASD3485 ④ (£3.99) *® 1977

Karajan's third recording of the fourth symphony may seem, initially, almost too perfect: the standard of execution is exceptional. But one should not be so aware of the playing, as such, to miss the point that Karajan's reading has become tighter, more profound. The tempi are all very broad—Brucknerian indeed in the third movement—and in the first movement there is a lumbering weight, part of the conception, which some will like less than the radiance which Davis brings to the string writing in his Boston recording (Philips). Karajan has made the very ending more severe, avoiding any slowing. EMI's recording has more body than the 1965 DG, and separation and instrumental positioning are extremely precise. The affinity with the fifth symphony emerges here, more than in any other reading I know. [A*: 1*]

Christopher Brunig

SIBELIUS: The Complete Tone Poems
Phyllis Bryn-Julson (sop) / SNO / Gibson
RCA RL 25136 (2 records) (£6.98)

It would be hard to suggest a more suitable conductor for this particular project. Alexander Gibson has an undoubted flair for both the feeling and the musical detail in Sibelius' tone poetry, and the interpretations offered here are unlikely to disappoint. If there is one exception, it is that of *Tapiola*, in which I miss the underlying stillness. Gibson's *En Saga* is finer than the recent BPO/Karajan version on HMV, and Phyllis Bryn-Julson contributes splendidly to an impressive *Luonnotar*—one of the choicest of Sibelius' shorter works. The other items are the early and little-known *Värsäng* (Spring Song), *Finlandia*, *The Bard*, *The Dryad*, *Pohjola's Daughter*, *Night-Ride* and *Sunrise* and *The Oceanides*: all the works actually designated 'tone poem' or its equivalent. There is much distinguished playing by the SNO, of a kind that is quite free from showiness. If the recording were of a comparable quality, this would indeed be an outstanding set, but regrettably it is not. Many of the quieter, more lightly scored passages—much of *The Bard*, for example, or the beginning of *The Oceanides*—are of A quality; but in general the presence and the tonal character merit only a B, frequently falling to C at climaxes. The engineering, alas, seems to be aimed at impressing the unmusical. Even relatively small opportunities are seized on for an exaggerated impact, and often the result is brash and searing. In this respect, *En Saga* and *Finlandia* may be considered representative. [A/B/C: 1*/1] *Hugh Ottaway*

SOR: Fantaisie élégiaque, Op. 59 □ **Sonata in C major, Op. 19b** □ **Fantaisie Op. 7** □ **Etude in A major, Op. 6, No. 12** □ **Fantaisie on 'Ye Banks and Braes', Op. 40**
Alice Artzt (gtr)
Meridian E77006 (£2.99) (Selecta)

Miss Artzt has a considerable and growing reputation. After listening to this recital, it is not difficult to understand why. She studied with Lagoya and Bream, and the influence of the latter is particularly noticeable. A recently televised series of master-classes demonstrated at every turn those qualities which make Bream a great artist—not least his grasp of, and attention to, the detail of a work. Miss Artzt has profited by his teaching; and the generally reflective style of the music chosen here suits it well: Op. 59 is a threnody, and a very moving one, though one gathers that some editing has been undertaken to

shorten it. The variations elsewhere do introduce more sprightly playing in which, as it seems to me, Miss Artzt is less assured. Even 'Ye banks and braes' is very enjoyable: an example of what was at the time of its composition a fashionable interest in Scottish music.

The recording would be a very satisfactory one but for the exaggerated width of the instrument and, more importantly, for some of the worst and most distracting traffic-rumble I have ever had to endure on disc: the New York location makes the Kingsway Hall seem like a haven of silence. One has to listen through the extraneous noises—so very inappropriate to both music and instrument—but the effort is well worth while for anyone who cares for considered performances and excellent guitar music. [B/C: 1] *Peter Turner*

R. STRAUSS: 'Salome'—closing scene □ **Dance of the seven veils** □ **5 Songs with Orchestra—Cäcilie, Op. 27: 2** □ **Wiegenlied, Op. 41: 1** □ **Ich liebe dich, Op. 37: 2** □ **Morgen, Op. 27: 4** □ **Zueignung, Op. 10: 1**
Montserrat Caballé (sop) / French National Orch / Bernstein
DG 2530 963 (£4.35)

Spanish-American-French Strauss: and it works very well. The last scene from *Salome* is projected with a compelling theatricality, a tingling sense of live and forceful music-making. The Orchestre National, so disappointing by comparison in their Berlioz recordings with Bernstein—even poorly engineered by EMI—seems transformed. Not only is the attack, the exuberant response, far more characteristic, but the soft playing really holds the attention. The orchestral excerpt is savoured: it appears slower than normal, although the timing is within three seconds of Böhm's, at 9' 35" (cf. Strauss' own recording: 8' 36").

As a lieder singer, Caballé is decidedly less satisfying. One is too aware that German is not her own language, also too aware of her breathing. Compare Schwarzkopf in the seamless vocal line of *Wiegenlied*—marvellously accompanied by Szell (HMV ASD 2493)—and there you have complete artistry, fuller understanding of the stylistic requirements.

DG's production is excellent, with the voice set well back in the orchestral songs, and plenty of depth, and separation. A very convincing staging. The sleeve insert has several photos, including a plan view of the sessions. [A: 1/2] *Christopher Brunig*

STRAVINSKY: Suite—L'Histoire du Soldat □ **Septet** □ **Pastorale** □ **Three Pieces for clarinet** □ **Suite Italienne**
Serkin / Kavafian / Stoltzman / Sherry / Ensemble
RCA RL 12449 (£3.49)

This record is labelled 'Tashi plays Stravinsky': Tashi appears to be a performing group consisting of Peter Serkin, piano, Ida Kavafian, violin, Fred Sherry, cello and Richard Stoltzman, clarinet. Three guest players are brought in for the Septet. The *Histoire du Soldat* suite is the one for violin, clarinet and piano, consisting of five pieces only: it receives a vigorous performance, with good balance and bright recording. The violinist has a delicate tone in the Valse. The Septet of 1953, the most avant-garde work on this record (though it remains mainly diatonic), shows Stravinsky experimenting with canons and eight-note rows before his incursion into twelve-note music: it also receives a clear and well balanced performance. The 1975 DG recording of it by

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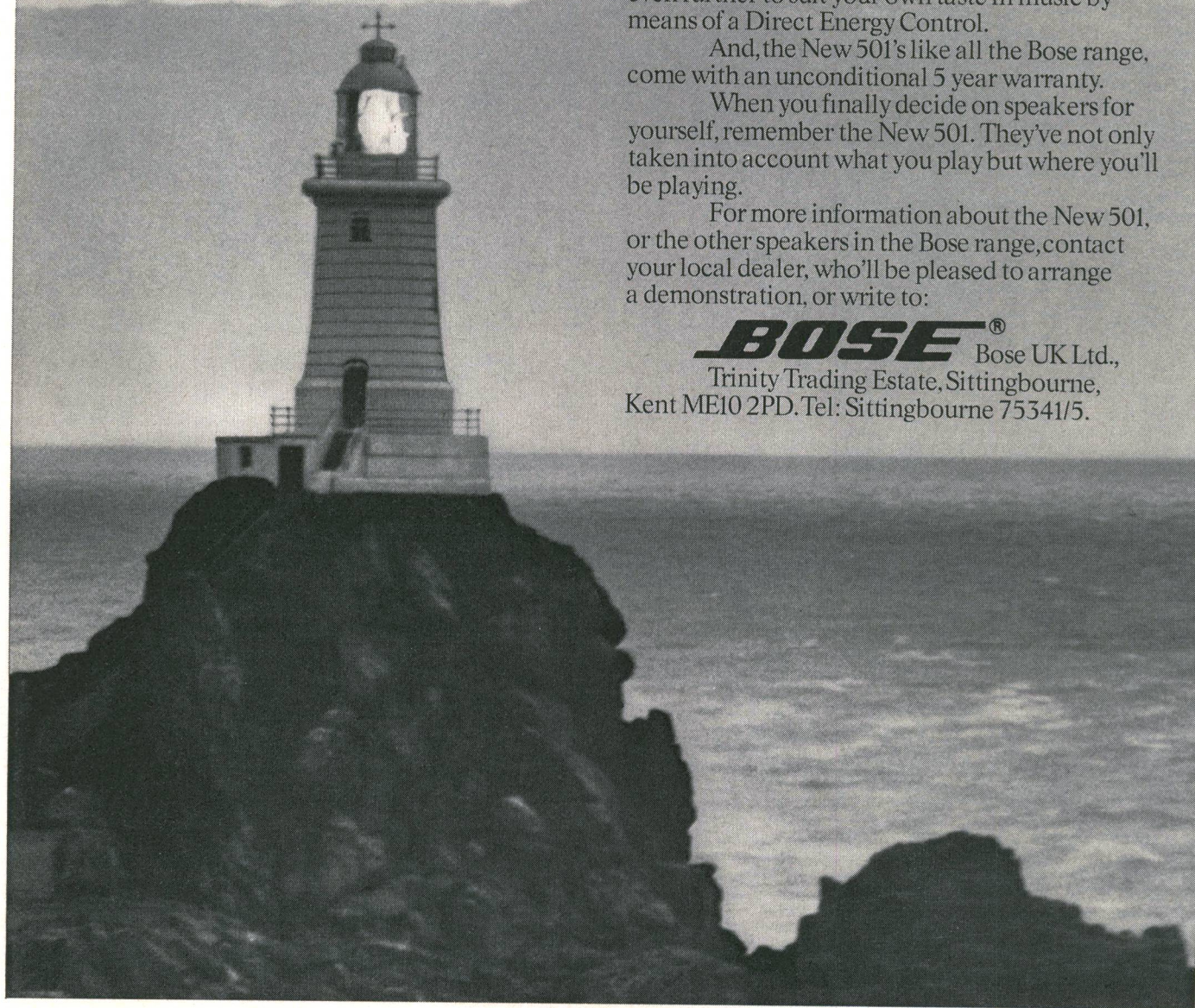
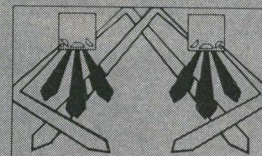
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the Boston Symphony Chamber Players is rather heavier in style and the recording is more resonant. The Boston players also include the early *Pastorale* on their disc, but in the version for violin and four wind instruments: here we have the version for violin and piano, with some fine lyrical playing by the violinist. In the solo clarinet pieces Richard Stoltzman has nice tone and also shows virtuosity in the second and third pieces: my copy has some pre-echo here. The *Suite Italienne*, based on music from the ballet *Pulcinella*, is given here in the version for cello and piano, which includes one number, the *Aria*, which is not in any of the other suites. Fred Sherry plays robustly and excitingly, though he changes the last four bars of the *Aria* into pizzicato, contrary to the marking in my score. Possibly Itzhak Perlman in his 1976 EMI recording of the violin version has slightly more zip in the vigorous passages, but this is a very enjoyable performance and the record as a whole is very interesting and varied. [A: 1]

Humphrey Searle

SZYMANOWSKI: Violin Concerto No. 1, Op. 35
No. 2, Op. 61*

Wanda Wilkomirska (vln) | Warsaw National Philharmonic | Witold Rowicki | Charles Treger (vln) | *WNSPO | Robert Szymanowski
Aurora AUR 5063 (£2-75) (Rediffusion)

Doubtless this record is intended as a tribute to the composer, the fortieth anniversary of whose death occurred in 1977. One wonders why it was thought useful to record works which are widely separated in time and musical conviction under different conductors and with different soloists: comparison between the two would surely have been easier with the same team for both. They have in common primarily the dedicatee, Paul Kochanski, a virtuoso who was Szymanowski's friend and who revised and edited the violin parts of both works. It was doubtless this influence which makes them so satisfactory from the point of view of instrumental technique: they are both very much violinists' concerti, and highly enjoyable for that alone. Szymanowski was also a very careful craftsman, and both concerti are interestingly and economically made, besides being attractive melodically even on first hearing.

They are also both beautifully played; and one wishes that the same could be said of the recording: it is, however, cut at a ferociously high level, which may be why the tone gets rough on *fortissimo* passages, and even below that level, and gives the impression—which I am sure is false—that both excellent soloists sound less mellifluous than they should. The solo parts are pushed too far forward for my taste, and the orchestral parts lack perspective and above all detailed separation. It is a great pity: both of these works deserve a considered reappraisal, and if they do not get it here, the fault lies mainly with the recording. [C: 2]

Peter Turner

TCHAIKOVSKY: Symphony 2 in c, Op. 17
'Little Russian' □ Romeo and Juliet—Fantasy Overture
 Philharmonia | Muti
HMV ASD3488 (4) (£3-99)

Muti completes the three early Tchaikovsky symphonies with an enjoyable Op. 17, neat and elegantly controlled, if a little too bland in its objectivity. Similarly, I find the Fantasy-overture too even—contrast the wide range of colours and tensions, the way the drama is projected in the most positive manner, in the fine VPO/Karajan (Decca SPA119).

In the symphony, I think Abbado, with the NPO (DG) shows a deeper grasp of the composer's symphonic logic than Muti, notably in movements 1 and 3. In the outer movements Abbado may seem cooler, initially, and without couplings his disc may strike you as uncompetitive. DG's sound is a bit thin in quality, but very clean and open, marginally truer than EMI's. The new disc is especially impressive in the percussion-scoring in the last movement of the symphony; generally it is pleasantly rounded, smooth, and slightly veiled. It sounds like the Kingsway Hall.

At mid-price DG duplicate the new coupling in Dresden recordings under Sanderling (a strong *Romeo & Juliet*, not very expansive in the love music) and Masur. Masur's 'Little Russian' is less 'safe' than Muti's, in choice of tempi, more individual in characterisation of detail. It compares well technically. The layout is reversed—i.e. the HMV starts with *Romeo & Juliet*. [A: 1/2]

Christopher Breunig

TCHAIKOVSKY: Symphony 3 in D, Op. 29
'Polish'

Philharmonia | Muti
HMV ASD3449 (4) (£3-99)

Although it does not have the 'magic' of Rostropovich's LPO recording, Muti's is an attractive account of the 'Polish'. Whilst he drives the orchestra excitingly, at the end of the first movement, he is more inclined to let the music speak for itself—very relaxed, but still pointed, in the *Alla tedesca*, for instance. Thus he is at the opposite pole—no pun intended—from Maazel, who is consciously 'symphonic' in his VPO/Decca, presumably due for reissue soon on the 'Jubilee' label. Arguably Maazel's powerful projection of the music, if less warm in feeling, concentrates the listener's attention more. The effect is perhaps a reaction too to the contrasted recordings, the old Decca weighty and well-defined, the HMV SQ rather vague and swimmy. As a singly available version, Muti's is fine, but go to Rostropovich, as I say, at almost any point, and there is an indefinable but striking quality there that the Italian cannot match. [A/B: 2]

Christopher Breunig

Karajan's Tchaikovsky 4th

TCHAIKOVSKY: Symphony 4 in f, Op. 36
 BPO | Karajan
DG 2530 883 (£4-35)

Produced in the Philharmonie, this is Karajan's fourth stereo version of this work with the Berlin orchestra, his fifth LP recording. The two listed alternatives, on DG (1968) and HMV (1972), show that while the broad outlines of the interpretation remain constant, there are detailed changes suggesting a striving for purification of the reading, and intensification of the way it is represented by Karajan's engineers.

The most obvious difference lies in the finale, which here has the same relationship to the 1968 version as Karajan's most recent Beethoven 7th finale has to its DG predecessor. A burning rhythmic purity, and the ruthless elimination of such previous details

as the touch of hysteria in the string playing at bar 149, after the big crescendo. If that is an improvement, less welcome is the tauter tempo for the *Meno mosso* in the scherzo: originally, Karajan's slowish speed gave an attractive warmth of characterisation to the woodwind playing. The HMV shows the revised concept, almost as developed here. It must be said that the execution is quite remarkable, with some ravishing string pianissimi. Certainly the most disciplined of the three performances.

But with its wide dynamic range, the latest disc is the least comfortable to listen to, the least concerned with the average domestic environment in which records are used. In general balance it resembles the EMI, though it has a drier acoustic, and exploits depth much more. The brass are very forward, and at key passages the strings are brought forward, thus making a very 'three dimensional' sound picture. Interestingly, I think individual timbres, such as the strings' pizzicati, were truest of all in the earlier DG, which had a closer overall perspective. The production differs markedly from the recent Beethoven symphony cycle, for perspectives are retained with much more consistency here.

In all, a fascinating new Tchaikovsky fourth. Whether listeners will find it musically as pleasurable as those readings more overtly concerned with 'fate' and such-like is another matter. The struggle illustrated is essentially Karajan's own quest for 'perfection'. [A*: 1*]

Christopher Breunig

TCHAIKOVSKY: Suite 3 in G, Op. 55

VPO | Maazel
Decca SXL6857 (£3-99)

In the opening bars Maazel and Sir Adrian Boult (HMV ASD3135 4) give one of those immediate and illuminating contrasts in music interpretation that are the principal delight of listening to records. Maazel gives the initial theme more than a slight rouging, with a languorous speed that colours the artifice in the writing. At the climax of the movement he gives the scoring a powerful theatricality. By contrast, Sir Adrian's speed is much swifter, the elegy is distinctly Elgarian in its reticence; under his baton the music seems to develop with perfect naturalness and inevitability.

More or less that sets the pattern, with Maazel taking the freer approach—the chilly manner of his VPO symphony cycle now displaced by something warmer, though arguably imposing arbitrary artificialities. The scherzo too shows a concept that sounds 'imposed' when set beside Sir Adrian's delightfully innocent approach.

The EMI recording is to be preferred to the Decca, for there is more space around the instruments; in spite of some pleasing hall ambience (Sofiensaal, last June) and good string tone the Decca is not wholly free of opacity, and depth perspectives are not quite consistent. I would withhold a star here. [A: 1/1*]

Christopher Breunig

VAUGHAN WILLIAMS: 'Flos Campi' □ Suite for viola and orchestra

Frederick Riddle (vla) | Bournemouth Sinfonietta and Choir | Del Mar
RCA RL 25137 (£3-49)

It was a good idea to put Vaughan Williams' two viola works on one record. *Flos Campi* is, of course, an acknowledged masterpiece, though it has never been much recorded, but the Suite for viola and orchestra

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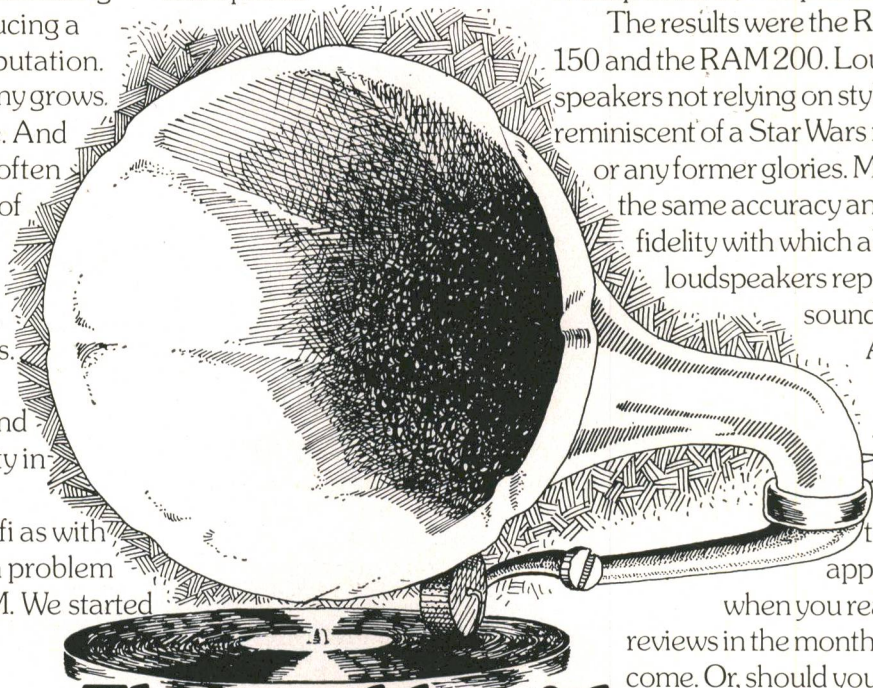
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is little known and its chain of nine short movements may well hold surprises for quite a few listeners. This is, I think, only its second recording. Both performances are very acceptable—or rather, they would be if the quality of sound were more pleasing. Unfortunately, there is much here that disappoints. The solo viola is generally well forward, which may account for the edge that the recording has given to its tone; other parts tend to be in a single plane, there is some obvious engineering in the matter of climaxes and emphasis, and the louder passages are also rather shrill. What I dislike most, however, is the seemingly artificial ambience: the feeling of a resonant space which is no space at all. Try to hear before buying. [B: 1] *Hugh Ottaway*

VERDI: 'Il Trovatore'

Price | Cappuccilli | Obratzova | Bonisolti | Raimondi | Chorus of the Deutsche Oper, Berlin | BPO | Karajan
HMV SLS 5111 (4) (3 records) (£11.95)

This new recording of *Il Trovatore* is a sonic delight. For all that it generally favours a forward vocal balance, it does not often go beyond the bounds of the sound one might hear in the front rows of an opera house. The Berlin Philharmonic's playing is delightful—especially the strings and brass and the textural balance is a source of great joy (listen particularly to the clear, rich bass lines: they not only provide the foundation of the sound, but also repeatedly achieve a melodic stature of their own). This is von Karajan's second recording of this opera and aurally it is the better of the two—indeed it may be the finest of all.

Vocally the credits are also high, but not as high or excellent as orchestrally. Leontyne Price gives us a dark, sombre, rich-toned Leonora. The more brilliant, agile moments are slightly heavy, even effortful, but this is a tragic reading of the role and therefore (rightly) leans towards the expressive rather than towards vocal fireworks. Elena Obratzova is an exciting discovery. Hers is a forceful portrayal of Azucena. Her voice is powerful and well projected and if her interpretation is rather raw, it is nonetheless very exciting. Franco Bonisolti's Manrico is well sung, suave—at times rather detached and at worst coarse-grained. The Conte di Luna of Piero Cappuccilli is warm, mature—a most rewarding experience. He is, however, stretched very hard by von Karajan's slow tempo in 'Il balen' (Act I). Less substantial is the warm, but rather faceless Ferrando of Ruggero Raimondi. The choral singing is superb: crisp, clear, powerful and beautifully co-ordinated. The recorded sound is demon-

stration quality (hence its star rating), but the balance changes at various points of the drama (at von Karajan's behest?—to reflect the mood?). This may find favour or fault—I'll leave that problem to Quality Monitor. [A*: 1/2] *Benedict Sarnaker*

VERDI: Quattro Pezzi Sacri

Radio Chorus Leipzig | Leipzig RSO | Kegel
Philips Universo 6580 213 (£2.45)

These four choral works were produced during the last years of Verdi's life. They are separate pieces (even scored for different forces) and do not really form a satisfactory group. Verdi himself almost disowned the setting of the *Ave Maria*, calling it a *sciarada* (a charade). However the four pieces were published together and are often performed together under the umbrella of all being religious settings. They vary in style and also in content. The *Ave Maria* (for unaccompanied chorus) is whimsically odd—it uses an 'enigmatic scale' which a professor of music set his colleagues as a conundrum. The *Stabat Mater* (chorus and full orchestra) has an awesome start and more than just echoes of the *Requiem*, but for all its drama it sprawls somewhat and this loses the penetrating power of the larger work. The *Laudi alla Vergine Maria* (originally sung by solo female voices, nowadays by female chorus) are a sweet 'celestial' setting if the last canto of Dante's *Paradiso*. The *Te Deum* (mixed chorus and orchestra) is the largest and finest piece of the four, from its solo chorus entry, through the marvellous entry for the orchestra at 'Sanctus', to its quiet, throbbing close. The performance is very good and the recording likewise. [A: 1]

Benedict Sarnaker

VIOTTI: Violin Concerto No. 16 in e □ Violin Concerto No. 22 in a

Yehudi Menuhin (vln) | Menuhin Festival Orch | Menuhin

HMV ASD 3492 (£3.99)

Every now and again a new recording serves to remind us how unjust the neglect is in which we hold Viotti's music. As Robert Donington points out in his sleeve note, Viotti is in the mainstream of Italian virtuosi of, and composers for, the violin, and his own musical style blends romantic and classical elements. The listener who did not know these concertos might well have difficulty in dating them. The E minor work (until recently available in a pleasing DG coupling, with no. 24 in B minor, from Röhn and Mackerras) was composed early enough for Mozart to have written a (lost and surely unnecessary!) alternative Adagio for it, as well as trumpet and tympani parts used here; the A minor

work dates from around 1800. (It is also to be had on an elderly Turnabout, played by Lautenbacher; not long ago there was a Grumiaux version too). Neither concerto is a stranger to the catalogues, then, but these full-blooded, strong, rhythmically keen performances are bound to make new friends for Viotti. Menuhin as conductor and soloist leans towards a romantic view of the works, for example in the big, anachronistic cadenzas (by himself in no. 16, by Kreisler in no. 22); the eloquence and power of the playing, and where appropriate the delicacy too, are very impressive. Despite the occasional impurity of tone, there is ample brilliance up in the leger lines and an engagingly smoky quality low down. Nice orchestral playing and fresh, sonorous recorded sound increase the desirability of this issue. [A: 1]

Peter Branscombe

WEBER: Piano Sonata No. 2 in A □ Piano Sonata No. 4 in e □ 'Invitation to the Dance' □ Polacca brillante

Paul Crossley (pno)
HMV HQS 1418 (4) (£2.85)

Weber's piano music was and is far more important than its representation in the current catalogue (just the First Sonata) would suggest, so a warm welcome is assured for this valuable new recording. Paul Crossley, whom I had not until now associated with Romantic piano music, has put together on two uncommonly generously filled sides four very striking works. The Second Sonata of 1816 is the earliest—an overlong, or at least a diffuse, opening Allegro Moderato hardly prepares one for the fine Andante (beautifully shaped and pointed here), pleasing minuet and graceful yet perky closing rondo. From 1819 come both the Polacca brillante and Invitation to the Dance, each of them familiar from a later transcription (Liszt and Berlioz respectively) but even finer in their original (in both senses original) piano guise: brilliant yet poetic, gay yet also wistful. Then we have the Fourth Sonata of 1822, Weber's last. Benedict's memoirs vouchsafe us insight into Weber's reported intentions, nothing less than a kind of psychological case-study of the Romantic artist—grief, frenetic excitement, the hope of consolation, and a brilliant Tarantella that ends with death. It is not Mr. Crossley's fault if the piece itself can only hint at these essentially extramusical associations—throughout, the clarity and persuasiveness of his playing is in evidence, and the producer and engineers have captured the piano tone with commendable fidelity, though there is some surface noise. [A: 1]

Peter Branscombe

Déjà Vu

Orchestral

KARAJAN'S beautifully recorded 1965 *Bach Brandenburg Concertos* (now Privilege 2726 080, 2 records, £5.18) have been criticised for their smooth, elegant contours. Yet the Berlin Philharmonic ensemble and solo artistry are remarkable—Scherbaum in No. 2, for example—and we thoroughly enjoyed this set, apart from the eccentrically slow Menuetto of No. 1. (Incidentally, Alan

Civil is listed as *Alain Cecil*!) Rendition of ambience and depth are excellent. The sequencing leads to a side-break in No. 5. Recommended to those who can accept the basic premise of Karajan's performance as [A: 1].

The 1965 Karajan recording of the *Berlioz Fantastic Symphony* has always been one of our favourites, and was certainly not equalled by his rather dull 1976 version. But DG have now down-priced what we stubbornly regard as the better performance onto Privilege 2535 256 (£2.59), and if you like the Berlin sound at its optimum of spacious brilliance, with Karajan offering smooth control yet much Berlioz fire, this is well worth

considering. [A: 1]

Concertgebouw/Haitink performances of the *Haydn Variations*, *Academic Festival Overture* [A: 1] form satisfying side 1 of Philips *Brahms* sampler (6833 234; £1.50). Snippets from back-catalogue on reverse—2 Hungarian Dances (LSO/Dorati), slow movt. from Grumiaux/Davis Violin Concerto, Heynis/Sawallisch *Alto Rhapsody*, Op. 76: 4 *Intermezzo* (Varsi)—vary [A: 1/C: 3].

Too intelligently planned to dismiss out of hand, Maazel's Cleveland Brahms cycle (Masonic Hall 1976) nevertheless suffers from self-conscious attention to details; seemingly arbitrary preoccupations, and a stressing of sym-

metries also characteristic of his London concerts with the Philharmonia. Symphony 2 in D, with the *Tragic Overture*, comes on Decca SXL6834 (£3.99). Scherzo and finale come off best here, and the sound is often exceptional. [A/A*: 2]

Jochum's 1967 recording of *Bruckner's Symphony 3* with the Bavarian RSO reappears on DG 'Privilege' 2535 265 (£2.59). Jochum is able to give the work (performed from the Nowak edition, faithful to Bruckner's final intentions rather than his original version) a wide overview, it seems, so that the long first movement in particular appears as a single entity. Recording good, with slight spotlighting,

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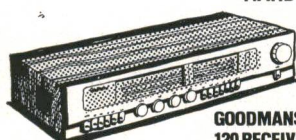
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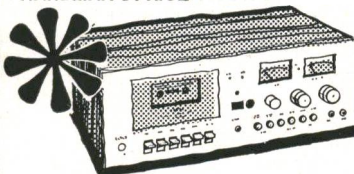
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but an overall pleasing bloom to the sound and brass particularly natural. Only quibbles are the side break in the Adagio, and a feeling of a somewhat restricted dynamic range with slightly congested 'blaze-ups'. [B: 1*]

DG 'Privilege' 2535 268 (£2.59) combines two 1966 **de Falla** recordings; *Nights in the Gardens of Spain* from Kubelik/Bavarian RSO and Margrit Weber (pno) and a set of *Three-Cornered Hat* dances from Maazel/Berlin RSO. Both conductors, Maazel particularly, get the Andalusian flavour of the writing across (although admittedly the folk influence is less subtle in *Hat*) and, as this seems to be the only disc available offering this coupling, it is good value for money. Overall balance is natural, though individual instruments are close; the piano, as well, could have been integrated better in *Nights*. Hafler rear speakers, however, help a lot. Slightly rustly surface possibly not unconnected with the 'Record manufactured in England' sticker. [B: 1]

The **Handel** on DG 'Privilege' 2535 269 (£2.59) consists of the *Fireworks* music, Kubelik/BPO, and Nos. 3, 4 and 8 of the Op. 6 *Concerti grossi*, Karajan/BPO. The *Fireworks* are attractively performed, in Handel's later concert version with strings. In the *Concerti grossi* Karajan, using a modern orchestra, succeeds in conveying to modern ears the pleasure Handel gave to his contemporaries with the orchestra of his time. Both works recommended. [A/B: 1]

Mahler's 1st Symphony, 'The Titan', RPO/Leinsdorf, first appeared in 1972 as a Phase 4 recording. It was one of the finest recordings on this label, of great clarity and wide range, yet devoid of any gimmicky balance. The performance was a carefully considered one, as one would expect from Leinsdorf, at times passionately urgent, at times delicately fragile and simple, capturing completely the Mahler idiom. The present transfer on Decca SPA 521 (£1.99) seems yet a further improvement on the previous spectacular sound with its vivid, thrilling brass. A bargain indeed. [A: 1]

André Previn's complete recording of **Tchaikovsky's** *Swan Lake* was generally praised for its fine orchestral playing and a recording of great richness. Those who like a more refined approach may find it over-rich in flavour. Intensely dramatic, the highlights disc seems even more overwhelmingly high-pressed with the intervening plains missing. But it is certainly an impressive performance with a great vitality at all times and the recording is as full-blooded as the playing (HMV ASD3491 @, £3.99) [A: 1].

The **Verdi** Ballet Music from *Il Trovatore*, *Otello* and *I Vespri Siciliani* impressively performed by LSO/National Opera Orch. of

THE PHILIPS VIVALDI EDITION

FIRST release in the Philips **Vivaldi** Edition (see 'Deja Vu' May) is Volume 3, 6768 009 (5 recs, £12.50), comprising the 1963 I Musici recording of Op. 3 *L'estro armonico* and Op. 4 *La Stravaganza* concertos. These were very well-regarded performances in their day and, in the main, still stand up well today, although the approach to trills and ornaments is distinctly conservative and, in one or two cases, even clumsy. The vitality of Vivaldi's writing does come through to some extent, though the overall impression is one of formality. The recording is good and surprisingly spacious but the violins have a shrill edge. Excellent sleeve notes by Franz Giegling, who prepared the performing edition, and continuo is harpsichord and organ in Op. 3 & 4 respectively. Good value as this set is, we cannot really recommend it when more daring and better recorded versions of both sets from Marriner/ASM (who also show a more imaginative approach to continuo instruments) on Argo are available at slightly greater cost. However, you pay your money and you take your choice. [B: 1/2]

Severino Gazzelloni's perform-

ance of Vivaldi's Op. 10 flute concertos with I Musici have been a must for Vivaldi enthusiasts since their appearance in 1969 and now, coupled with the six Op. 11 and six Op. 12 concertos played by Salvatore Accardo/I Musici from 1975, comprise the second release in Philips 'Vivaldi Edition', Volume 6, 6768 012 (4 recs, £10.00). Gazzelloni is a wonderfully sure soloist, and Op. 10, with the dramatic *La Notte* (sans bassoon) and joyful *Il cardellino* (Goldfinch), is the perfect Vivaldi vehicle for him. Accardo, too, in the Op. 11 and 12 concertos, plays with taste and precision, although ornamentation is conservative by today's standards. These are always musical performances, though, and highly satisfying. Both soloists are excellently supported by I Musici who show no trace of the stiffness present on the Op. 3 or 4 sets. The recording is also much better here, very warm and with almost a perfect balance between soloists, ripieno and continuo. Despite a recent emergence of Vivaldi recordings placing emphasis on authenticity of both style and instruments, there is always a place for musicianly performances such as these. Recommended! [A*/A: 1*/1]

Monte Carlo/Almeida is on Philips 'Universo' 6580 264 (£2.45). This tuneful music has an immediate appeal, and is here magnificently recorded. Readers are reminded that the ballet music from the *Sicilian Vespers* is in four parts representing the four seasons. It is particularly attractive in its own right. [A: 1]

Chamber/Concertos

RAYMOND LEPPARD directs the ECO in 9 selected *Concerti for Harpsichord* by **Bach** (3 discs: Philips 6747 194, (£7.50), formerly in a larger boxed set: performances are hard-driven and rather extravert, but enthusiasts for that kind of approach will savour the clean recording and the spirit of the whole: the virtuoso Blandine Verlet plays fourth (!) in the concerto for four harpsichords.

Piano Concertos 2 & 3 of **Bartok** from Geza Anda/Berlin RSO/Fricsay is on DG 'Privilege' 2535 262 (£2.59) (1960). Incisive pianism and strong orchestral support in a sometimes slightly hard-edged recording. Soloist nicely balanced against orchestra, however, and the percussion is splendidly solid; almost tangible. Recommended. [A/B: 1]

Christoph Eschenbach gives a thoughtful and well-rounded account of **Beethoven's** Piano Concerto No. 1 on DG 'Privilege' 2535 273 (£2.59) with the BPO/Karajan. His approach is a little reserved, particularly in the opening movement, but the overall effect is powerful and suited to the character of the music. The rapport

between soloist and conductor is marvellous with Karajan drawing those inevitable, and apparently effortless, qualities of playing from the Berlin orchestra, great attention to detail and a seamless approach to phrasing. The 1967 recording is clear and nicely focused, but perhaps just a little too silky to be true! [B: 1]

Beethoven's Triple Concerto Op. 56 is on Harmonia Mundi HM 20335 (£3.99). The soloists are Paul Badura-Skoda (on an 1816 Broadwood) Franz Josef Maier (violin 1726), Anner Bylsma (cello 1835) with the Collegium Aureum. It is an outstandingly interesting and attractive performance, beautifully balanced and excellently recorded. Reproduction may require a little bass cut, and the treble can easily be tamed. This issue clashes with the recent immediately impressive performance and recording of the work by the LPO/Haitink with the Beaux Arts Trio on Philips, the undoubted leader in the field of modern orchestral performances. But here for the admirers of the authentic is a magnificent version which will be found richly rewarding. We now have a permanent nagging temptation to buy both. [A: 1]

Rubinstein's undimmed eagerness for Beethoven's 'Emperor' Concerto emerges clearly from his LPO/Barenboim recording—re-issued RCA RL11420 (£3.99). But with solo balance so close, one can hardly escape noticing woodenness in passage-work, rhythmic unsteadiness, or the heavy mezzoforte in the slow movement. [A/B: 2]

DG 'Privilege' 2726 082 (2 recs,

£5.18) is a rather splendid release, featuring as it does the late '72 Gilels/Jochum/BPO recordings of the **Brahms** Piano Concertos. Although the recording has the orchestra somewhat set back compared to a large piano, the actual sound is generally natural and the orchestra is internally well balanced. Gilels' playing is introspective rather than showy, a quality echoed by Jochum; some critics have complained of a lack of emotionality but there are inner fires burning deep here. Although some would add a performance star and some would want to downgrade the recording, a conservative [A: 1] is a fair rating and this must be a 'best buy' at the price.

Luminous piano tone, and virtuosic playing that is expressive and polished, yet avoiding slickness, or sentimentality, distinguish three 'Ace of Diamonds' Brahms reissues (Julius Katchen)—Op. 117 *Intermezzi*, Pieces Op. 118, 119; *Fantasias* Op. 116, Pieces Op. 76; early Sonatas, Op. 1, 2 (Decca SDD532-4; £2.50 each). [A/A*: 1/1*]

Vasary's somewhat variable 1965 **Chopin** Etudes, Op. 10/25, reappear on DG 'Privilege' 2535 266 (£2.59)—but hardly challenge Polini (DG) or Ashkenazy (Decca). Indeed, at half the cost, Kerszenbaum/CFP offers more grandeur, more 'personality', where Vasary tends to sound prim. Both recordings have similar flat, wide-spread images, the DG drier, the CFP slightly coarse; studies scrolled individually on DG. Our UK pressing had low-frequency grunts. [B/C: 2]

Mussorgsky's *Pictures at an Exhibition* and **Rachmaninov's** 6 *Preludes* are delightfully performed by Firkusny and Richter on DG 'Privilege' 2535 272 (£2.59). These 59/61 recordings sound lively with plenty of attack, excitement and tasteful ambience surrounding the pianos. Clear surfaces and a recommended introduction to these ever popular works. [A/B: 1]

Two of **Rachmaninov's** greatest and popular works are on one bargain priced disc, the 2nd Piano Concerto (32½ minutes) is complete on side 1, and the *Rhapsody on a Theme of Paganini* on side 2! Both are richly romantic performances by the greatly lamented Julius Katchen. The Concerto is with LSO/Solti and the *Variations* with LPO/Boult. The improved sound quality of this new transfer is staggering. It has some of the finest piano sound on record. A 1959 issue as impressive as a current 1978 release. The one weakish moment, sonically, in the 1960 issue of the *Variations* was at the peak of the orchestral crescendo in the famous 18th variation. Now the music sails through pure and undisturbed. Even if you already have earlier copies, treat yourself to a treat, buy Decca SPA 505 (£1.99). You will never regret it. [A: 1*]

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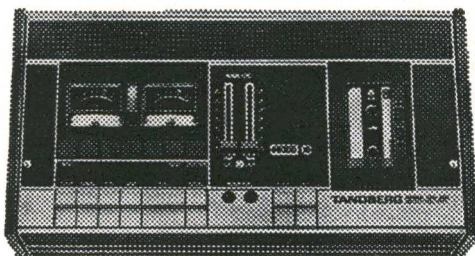
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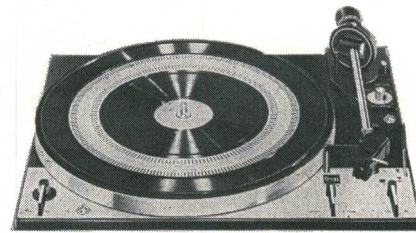
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cerned with completeness would **Wagner** Piano Works (Vol. 1, Turnabout TV 34654S, Vol. 2, TV 34655S; £1.99 each) come before the general public. These performances are by Martin Galling, recorded in 1963 (a two-disc Vox set briefly available though not reviewed in this magazine), and there are signs of age in the occasionally rather brittle and fuzzy keyboard tone; but Galling is a fine pianist, a champion of lost causes indeed, and he makes out a strong case for ignoring our reservations about the value of the undertaking. [C: 1]

Vocal/Operatic

THE Bach Magnificat in D BWV 243 and Cantata No 118 from the London Bach Society/Steinitz Players under Paul Steinitz has reappeared on Unicorn UNS 248 (£3.24). Barely qualifying for re-issue—it first came out only last year—this is another persuasive reading in the canon of Bach performances from Steinitz. His sensitivity of phrasing and impeccably judged speeds are well matched by his players, the chorus and the four soloists. Excellent, sensibly balanced recording. [A: 1*]

For the Callas enthusiast the recordings of **Bellini's Norma** always presented a problem as she did it twice, both with Serafin as conductor. The second 1961 version generally got the benefit of the doubt because it was in stereo and Serafin perhaps got more dramatic excitement from his forces (SAX2412/4). Callas herself reached some magnificent peaks of achievement in it, but also, in reaching for the utmost dramatically, made many errors and was sometimes at less than her best. The earlier recording from 1958, previously in mono only, now reappears stereophonically reprocessed (HMV SLS5115 [E], £8.95). It represents Callas in simpler and much purer vein, at her *bel canto* best, and is preferable in overall balance. The stereo enhancement is not vividly stereophonic but quite effective. More important is the fact that a reasonably good tone quality has been retained which makes for pleasant listening with only a hint of age. [B: 1*/1]

Sir Georg Solti with the LPO offers a cross-section of the opera **Carmen** by **Bizet**. It is mostly concerned with the orchestral items, the Prelude and Entr'actes and some of the choral numbers. Tatiana Troyanos, the Carmen, sings the Habañera. All the items are extracts from Decca's recent sonic spectacular presentation of the opera. Side 2 contains two orchestral and choral extracts from **Eugene Onegin** (**Tchaikovsky**) with the Covent Garden Orchestra under Solti. Finally with the LSO, Solti gives his famous performance of the Polovtsian Dances from **Prince Igor** (**Borodin**). All on Decca SET 622 (£4.25). [A: 1]

Alfred Deller sings '**British Folk Songs**' on Harmonia Mundi HMD 226 (£3.99). Alas, his performance of them is not nearly as good as other artists, Peter Pears for example. Deller's voice on this record, at least, sounds an ageing one. At times he seems to lose tone as does a boy alto nearing the breaking of his voice. Full texts are given, which indeed are necessary, for his diction is very poor. [A/B: 3/4]

The reissue of Bretislav Bakala's 1953 Supraphon performances of **Janacek: Sinfonietta** and **Glagolitic Mass** (Rediffusion Heritage HCN8005 [E] (£1.75)) is historically important. Bakala was a pupil of the composer's and his interpretations have considerable authority, and though his version of the *Mass* was challenged by Ancerl's, his performance of the *Sinfonietta* is outstandingly good despite the relative lo-fi. The soloists in the *Mass* are not named but are of a high standard, and the performances come through without too much impairment. [H: 1]

The relaunch of Harmonia Mundi in the UK by Rediffusion has led to the reappearance of German H-M recordings, previously issued on the defunct BASF label. One such is HM 20320-21 (2 recs, £5.98) which is a 1970s recording of **Lully** and Molière's *comédie-ballet, Le Bourgeois Gentilhomme*. Gustav Leonhardt directed and he aimed, as far as possible, to recreate the original 1670 production, even to using an identical orchestra with authentic instruments. The extent to which he has succeeded with this sort of 17th century Euro-farce is matched only by the recording which has singers and musicians set in a realistic acoustic. A very enjoyable recording, we only wish that an English translation of the French, Spanish, Italian and Turkish (?) text had been supplied. [A*/A: 1]

Generous helpings from 1960 (RCA) VPO/Leinsdorf **Mozart Marriage of Figaro** (Decca SPA514; £1.99) [B/C: 1] include brilliant and brisk overture. Worth having for the ladies—Elias, Peters, and above all della Casa—rather than the gentlemen (Tozzi, London). Available complete on three Decca 'Eclipse'.

Decca's reissue of Previtali's version of **Ponchielli's La Gioconda** (Decca D63D3, £7.50) is a little puzzling in face of the fact that they already have two versions available; the excellent Gardelli at full price (SET364/6) with Tebaldi in fine fettle; the commendable cheap version under Gavazzeni (GOS609/11). The Previtali originally appeared on the RCA label (SB2027/30)—then four records but now falling into line on three—and was commended for excellent sound. Milanov is no rival to Tebaldi, but Di Stefano is first-rate as Grimaldo. Taken all round it is an excellent performance, Previtali keeping things very much alive, and the 1959 recording is still very clear though a

little on the thin side. It makes choice difficult. With the EMI Callas not available, Tebaldi seems the most exciting prospect, but for a cheaper version this would now seem slightly preferable to Decca's other bargain issue. [A/B: 1]

A concert of Favourite **Schubert** Songs, is on Decca SPA 524 (£1.99). It is a most attractive, elegantly performed recital, and contains many of 'those you have loved'—The Trout, To Sylvia, To Music, The Earl King, The Hedge-rose, etc, etc. One of the delightful aspects of this record is that the songs are shared among many famous artists, Margaret Price, Hermann Prey, Helen Watts, Stuart Burrows, Tom Krause and Kathleen Ferrier, thus avoiding any possibility of tonal monotony. Unfortunately, this is not one of Decca's usual transfers in greatly improved sound, for here the engineers have given an edge to some of the voices, an edge that at times borders on a rattle. [A/C: 1/2]

EMI are reissuing in processed stereo several of their older Viennese operetta recordings starring Elisabeth Schwarzkopf (with other stars like Nicolai Gedda) and conducted by Otto Ackermann. The first to reach us is *Wiener Blut* (HMV SXDWS3042, 3 sides, £4.50) [E], the operetta which **Johann Strauss** left to be completed by Adolf Müller at the end of his bright career. Schwarzkopf is superb in this kind of music and with the support of Gedda, Kunz, Dönch, Köth and Loose and the Philharmonia Orchestra, a superb performance is assured. The reprocessing has been excellently done and the recording comes up fresh and clear with only a very slight artificiality to suggest its age. [A/B: 1*]

On DG 2740 144 (5 recs, £13.50), Böhm's 1966 Bayreuth **Wagner Tristan and Isolde**. Last seen in the Philips Bayreuth volume 6747 243 along with less distinguished *Lohengrin* and *Meistersinger*, it remains (despite Karajan) the recommended stereo *Tristan*. Nilsson, at her peak, tends to overpower Windgassen, admittedly a bit past his, but there's no doubt about the credentials of this set. One of the three classic '60s Bayreuth recordings (*Parsifal*), this is a Wagnerian must. Fine Bayreuth sound of depth, warmth and splendour, very much recommended. The side 10 rehearsal session, again included, fascinating too. [B: 1*/1*]

An older (now 23 years old!) Bayreuth Wagner recording, again classic, has Varnay, Uhde, Lustig, Weber under Keilberth in *The Flying Dutchman*. This 1955 set (Decca D97D3, 3 recs, £6.95) presents splendid, if slightly distant, vocal contributions in a live sound that's not at all bad: genuine stereo from the original tapes, a little thin and cavernous, but with quite adequate stage movements and instrumental disposition. We still wait for a really satisfactory modern

stereo *Dutchman* (come on, Herbert von, stop endlessly re-doing Tchaik symphonies 4, 5, 6), so meanwhile here's the bargain set to buy. [C: 1/1*]

Collections

THE six-record compendium '**Land of Hope and Glory**' (World Records SM401/6, £17.95) makes a superb collection of British music which has a strong national flavour or bias; a contribution to the Jubilee year reappraisal of the British spirit. It very much centres around Elgar and subsequent composers of the great national revival (Vaughan Williams, Butterworth, Holst) with excursions into the lighter worlds of Coates, Tomlinson, Binge; its main line to the past through the disc given over to song. Each LP deals with some aspect of British music and EMI have lavishly chosen from their best artists, orchestras and conductors (Boult and Groves prominent) and their best recordings old and new. A real treasure-house that anyone interested in British music of the best vintage will savour with delight. With some reservations but many stars deserved, it certainly averages at [A: 1].

Deutsche Grammophon have released another sumptuous album, this time reissuing some of their outstanding recordings. It is entitled '**The Great Works of Schubert**', DG 2740 188 (16 LPs, £35.00). It contains Symphonies 5, 8 and 9, and the *Rosamunde* Ballet Music (BPO/Böhm)/*Winterreise* (Fischer-Dieskau/Moore)/*Die schöne Müllerin* (Peter Schreier)/a Song Recital (Christa Ludwig and Fischer-Dieskau)/the B flat Piano Sonata, *Wanderer-Fantasie*, *Moments musicaux*, and *Impromptu* op. 90 and 142 (Wilhelm Kempff)/Piano Trio op. 100 (Trio Di Trieste)/*Quartettssatz/Quartets in A minor* (Rosamunde), No. 14 in D minor (Death and the Maiden), and No. 15 in G op. 161 (Melos Quartet Stuttgart)/*Trout Quintet* (Gilels and members of the Amadeus)/*String Quintet C major* op. 163 (Amadeus with William Pleeth)/*Notturmo in E flat* (Eschenbach pno, Koeckert vln, Merz 'cello)/*Arpeggione Sonata* (Fournier 'cello and Fonda pno)/*Octet* (members of the BPO). All these most attractive works are supplied in a handsome imitation vellum album with a rounded book back, complete with a book of notes illustrated with outstandingly fine full colour plates depicting Schubert, his friends and his pastimes. A wonderful introduction to Schubert's works for anyone yet without these issues, for all are first class and superbly recorded. [A: 1]

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Classical Cassettes

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BOXED SETS (Prices as marked)

MOZART: 'La Clemenza di Tito'—Baker | Minton | Burrows | Von Stade | Popp | Lloyd | ROH | Davis—Philips 7699 038 (3) (£11-97)

These boxed sets are such a delight to handle—I find them so much more attractive than the disc equivalent, nearer to a good book. And when they hold such riches as this fine recording of Mozart's neglected *La Clemenza di Tito*, treasure indeed. There are quality performances here from Janet Baker, Minton, Von Stade, Popp and Stuart Burrows and the score is beautifully handled by Colin Davis (Disc: Nov 77). Well-balanced sound and silent background, lots of star quality, but certainly a good average [A: 1] and no less.

MOZART: Vol. 6—Chamber Music—Violin Sonatas, K454 and K526 □ Clarinet Quintet, K581 □ Oboe Quartet, K370 □ Divertimento, K563 □ Piano Trio, K542 □ Clarinet Trio, K498 □ String Quartets, K458 and K465 □ String Quintet, K516—Haebler | Szeryng | Grumiaux | Beaux Arts | Bishop | etc.—Philips 7699 051 (3) (£11-97)

A warm welcome for this instalment of the Mozart Edition on cassette. The numbering and contents of the tape issues do not coincide entirely with the more expansive disc sets. The contents here range from good to superb. Great performances from Haebler and Szeryng in the Sonatas, superb reading of the Divertimento, excellent Beaux Arts in the Piano Trio, a fine Clarinet Quintet. Contents all recommendable and the recording generally of a very high standard, the Divertimento, for example, worthy of a star. [A*/A: 1*/1]

MUSSORGSKY | RIMSKY-KORSAKOV: 'Boris Godunov'—Ghiaurov | Vishnevskaya | etc. | Vienna Philharmonic | Karajan—Decca K81K43 (3) (£17-00)

Now that the Mussorgsky original is available (on disc) decisions are complicated. But certainly the cassette buyer wanting a *Boris* need look no further (if he likes Rimsky-Korsakov's more 'operatic' but less earthy version) than this superbly controlled, theatrical performance by Karajan. Ghiaurov is a civilised Boris and certain sections like the Coronation scene are underplayed, but in the main the results are magical. The 1971 recording is excellently clean and clear. [A: 1]

WAGNER: 'Tannhäuser'—Kollo | Dernes | Vienna Philharmonic | Solti—Decca K80K43 (3) (£17-00)

A magnificent performance full of dramatic tension, considered by some to be Solti's best Wagner recording. The connoisseur should be told that this is the 'Paris' version. The cast are excellent, especially the ladies, Dernes and Christa Ludwig and the playing of the Vienna Philharmonic is quite superb. The 1971 recording is of excellent quality, commendably clear and well-balanced but deprived of a star on cassette by a slight hardness of string tone. [A: 1*/1]

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MAHLER: Des Knaben Wunderhorn—Norman | Shirley-Quirk | Concertgebouw | Haitink—Philips 7300 572
Wonderful music and one of the most satisfying musical experiences in this column so far. Fine orchestral playing with Jessye Norman great, Shirley-Quirk slightly pulling his punches. A nice, natural sound and quiet background. (Disc: Nov 77) [A*: 1*/1]

MAHLER: Symphony 5 □ Symphony 10—adagio—LAPO | Mehta—Decca KSXC2-7048 (double)
This is the staggering, big-boned Mahler in the true Decca/Solti tradition. Mehta's is a virtuoso performance that seems to need a bit more mature warmth but otherwise impressive. The recording is of exaggerated magnificence. (Disc: Nov 77) [A*: 1]

MOZART: Symphonies 9, 10, 42 & 43—Mainz Chamber Orchestra | Kehr—Turnabout KTV37089
The playing seems to be too highly charged and the recorded sound is so harsh and unsteady that the delicate works appear to be battered to death. [C: 3]

MOZART: Piano Concerto 20
SZYMANOWSKI: Masques—Toper-czer | Slovak Phil | Slovak—Legend KROY2005
A fairly steady and straightforward performance perhaps a little lacking in sensitivity, but not helped by a hard and totally insensitive recording with considerable background hiss. [C: 2]

MOZART: Violin Concertos 3 & 5—ECO | Asensio—Royale KROY2012
Presumably because it was made in England this is by far the best of the Rediffusion cassettes heard so far and these are very lively and attractive performances. A slight mystery prevails as nowhere on cassette or box is the violinist credited—is it Señor Asensio? Sound full and wholesome. [A: 1]

MOZART: Requiem—Cotrubas | Watta | Tear | Shirley-Quirk | ASM | Marriner—Argo KZRC876
This is a good, sensitive, clean performance without entirely reaching the heights. The singing of Ilena Cotrubas is one of its best features. The sound would have helped by being more delicately balanced on tape at least—it sounds slightly too thick. (Disc: Dec 77) [A/B: 1]

OFFENBACH: The World of Offenbach—various—Decca KCSP512
This is a most lively and entertaining selection of Offenbach's likeable music—restricted to the well-known but with generally excellent performances from

Decca recordings by Ansermet, Sutherland, Bonyngne, Crespin—Average [A: 1].

PAGANINI: Sonatas for Violin and Orchestra—Accardo | LPO | Dutoit—DG 3336 376

For the person addicted to the smooth, tuneful urbanity of Italian music such as Paganini's this will prove an interesting and pleasing disc—as it is all new to record. The playing is polished and warm, the recording ideally spacious and clear. (Disc: Dec 77) [A: 1]

PROKOFIEV: Piano Concerto 3 | RACHMANINOV: Rhapsody on a theme of Paganini—Marian Lapsansky | Slovak Phil | Slovak—Royale KROY 2007

Alert performances that are enjoyable but all is not well with the sound. The piano is unduly prominent and the orchestra somewhat lost, the whole sounds as if it was recorded in a swimming bath. [B/C: 1]

RAVEL: Bolero □ La Valse □ Tom-beau de Couperin □ Pavane—Concertgebouw | Haitink—Philips 7300 571

RAVEL: Rapsodie espagnole □ Menuet antique □ Valses nobles et sentimentales □ Alborada del Gracioso—Haitink—Philips 7300 573
It is good to find Haitink tackling Ravel and proving himself a sensitive interpreter of such French music. These two discs make an excellent collection, with meticulous playing and a typically gentle, warm Philips sound—(Disc: Nov 77)—both [A: 1].

RODRIGO: Concierto di Aranjuez □ Fantasia—Romero | LSO | Previn—HMV TC-ASD3415

With so many versions of these works about and in obviously skilled hands, competition is hard. The board is not swept here but these are very skilled and convincing performances with a decent-sounding recording to match. (Disc: Jan 78) [A: 1]

ROSSINI-RESPIGHI: La Boutique Fantasque □ Rossiniana—RPO | Dorati—Decca KPFC4407

A model recording in most ways. The playing is immaculate yet full of life and the 'Phase Four' recording grasps all the detail without producing an unduly exaggerated perspective; a clear yet warmly impressive sound. (Disc: Oct 77) [A*: 1*]

SCHUBERT: Piano Sonata in D □ Impromptus in G^b and A^b—Curzon—Decca KSXC6135

These are typically sensitive and thoughtful Curzon performances of the highest quality. The piano tone is not entirely natural but pleasantly individual. [A: 1]

SCHUMANN: Symphony 1 in B^b 'Spring' □ Symphony 4 in d—CSO | Barenboim—DG 3300 660

Our reviewer was fairly critical of these performances (Disc: Dec 77) but they seemed neither exceptionally good nor exceptionally bad; quite acceptable and normally balanced on the cassette. [A: 1]

SIBELIUS: Symphony 2—Pittsburgh Symphony | Previn—HMV TC-ASD 3414

After the finesse and flow of the recent Davis recordings of the Sibelius this seems to be a fairly average performance with little of the magic that Davis obtained. Recording of good quality. (Disc: Dec 77) [A: 2]

SIBELIUS: Finlandia □ En Saga □ Tapiola □ Swan of Tuonela—BPO | Karajan—HMV TC-ASD3374

There is obvious excitement and tension here with a very good *Finlandia*. The Berlin players are always exceptional and they produce a rich, gratifying sound. The recording is a good one but seems to make the brass seem a bit harsh. (Disc: Dec 77) [A: 1]

STRAUSS FAMILY CONCERT—Vienna Phil | Boskovsky—Decca KJBC 28

A selection of Strauss, Johanns, Joseph and Eduard taken from various Decca releases of the 1960s, a mixture of the familiar and not so. Little more to be said except that Strauss is a natural for these forces and Decca know how to make them sound right—average [A: 1]

J. STRAUSS: 'Die Fledermaus'—highlights—Bavarian State | C. Kleiber—DG 3306 040

Highlights from a superb *Die Fledermaus*, prime glory it the sparkling orchestral playing that Kleiber obtains, excellent soloists, with Rebhoff remaining a controversial choice of Orlofsky. Otherwise all is superb and the recording also sparkles. (Disc: Jan 78) [A*: 1*]

SULLIVAN: 'The Yeoman of the Guard'—Sargent—HMV TC2-SCDW 3033 (2)

One of the excellent Sargent excursions into Sullivan: a highly musical performance and a recording that still sounds excellent. Good to find all these recordings getting on to cassette. [A: 1]

WALTON: Belshazzar's Feast □ Coronation Te Deum—Luxon | LPO | Solti—Decca KCET618

Compared to earlier recordings Solti's seems an exaggerated one and some of the possible magic of *Belshazzar* seems to be missing. The *Te Deum* is an inflated imitation Elgar work that nobody could make into a masterpiece. Otherwise recording and performance are of fair quality. (Disc: Nov 77) [A: 1/2]

WEILL: Kleine Dreigroschenmusik □ Mahagonny Songspiel—London Sinfonietta | etc. | Atherton—DG 3300 897

Taken from the superb Weill set (which no enthusiast should miss) these two items (Disc: Feb 78) are the most immediately appealing and make an ideal introduction to Weill. First-rate performances and a recording of utmost clarity and separation. [A*: 1*]

WIDOR: Symphony 5—Music by Grison and Jongen—Jane Parker-Smith (org)—HMV TC-HQS1406

This is a pleasant, true cathedral organ sound, done in Salisbury Cathedral, distant as though heard down the length of the cathedral, perhaps not ideally hi-fi. The playing is accomplished. (Disc: Jan 78) [A/B: 1/2]

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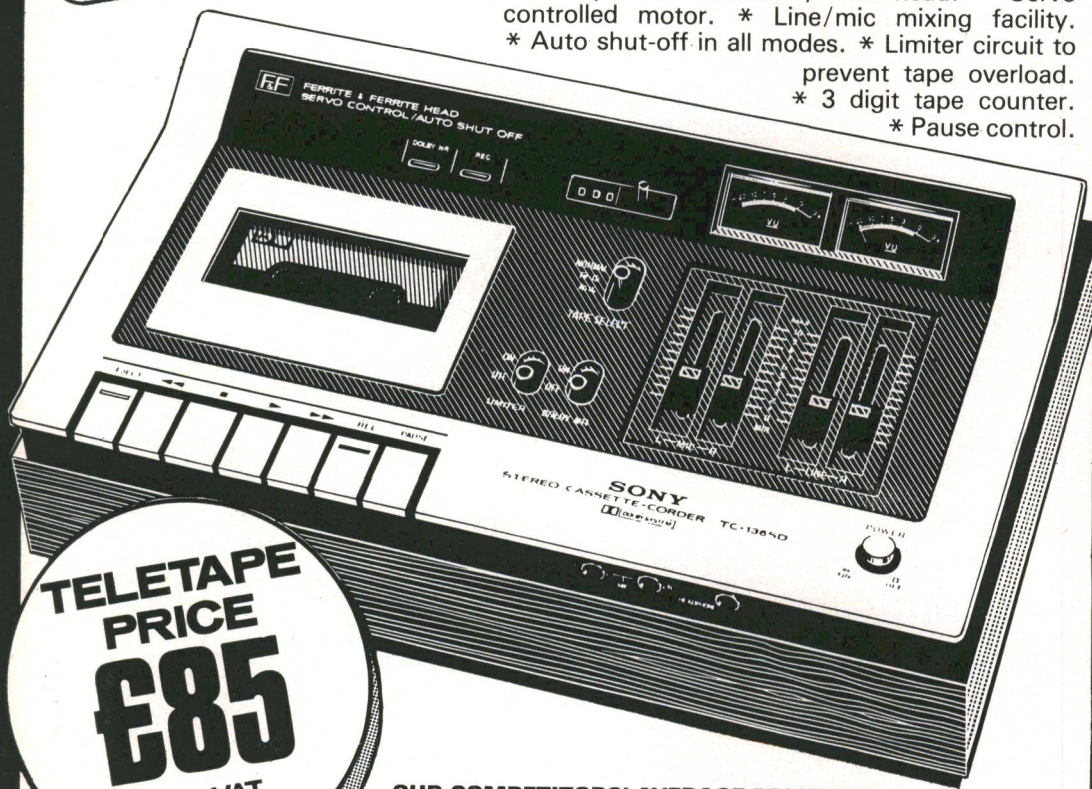
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ROCK



Fred Dellar

IT'S ironic that **The Rutles** (Warner Bros K56459) and **Wings' London Town** (EMI PAS 10012) should appear during the same week, for both have a bearing on the intriguing and continuing tale of Beatlefolk. The Rutles is The Beatles story as interpreted by Eric Idle and an array of assorted loonies, including ex-Beach Boy Rikki Fataar, the results recently being screened on BBC-TV. The soundtrack album is superbly packaged in a sleeve which depicts such past Rutle successes as *Sgt. Rutler's Darts Club Band*, *A Hard Day's Rut* and *Shabby Road*, while a music is virtually a collection of greatest hits from the group's days on Banana—the label that gave you Punk Floyd and Crosby, Stills, Nash, Young, Gifted And Black—and includes *Hold my hand* (from *With The Rutles*), *Ouch*, from the film of the same name, and *Let's be natural*, the chartbuster from *Let It Rut*. A great spoof then but one which doesn't really pan out on record because jokes are best when heard once only. However, the sleeve is a work of art and deserves to be hung at the Tate alongside a portrait of Alfred E. Neumann. [A: 2]

Real Rutlemanialives on through the work of Paul McCartney, now second to Rabbie Burns in the SNP hit parade since the phenomenal success of *Mull of Kintyre*. Happily, **London Town** (EMI PAS10012) doesn't contain that memorable dollop of pop haggis, though much of this particular musical tour is aimed at the same audience—namely Easy Listeners Anonymous. Even so, Macca is a craftsman at his trade and such lie-back-in-your-bathwater relaxers such as *With a little luck* and the title song are nothing if not attractive. Occasionally he offers up a hopelessly duff ditty—*Famous groupies*, for instance, is ninth rate music hall and about as rewarding as a picture of Mick McManus in drag—but on the whole, **London Town**, which is mainly by the full McCartney, Denny Laine, Jimmy McCulloch and Joe English Wings line-up (though only the McCartneys and

Laine figure on the album sleeve) is probably **Wings'** best album since *Band On The Run*. 'Scuse me just a moment while I reprise *Don't let it bring you down*, on which McCartney recreates an authentic Sun rockabilly sound, then I'll add a rating—about [A: 1] I should think—and then proceed to log the deficiencies of **Jubilee** (Polydor 2302 079), the soundtrack of what has been hailed as the first punk feature film. Sadly, this release does nothing to further the cause of rock. In fact it's more likely to send everyone back to the Valeta and St. Bernard Waltz! For the first side rock items by Adam And The Ants, Wayne County And The Electric Chairs, Chelsea and Maneaters are all aggression and no form. Everybody yawn. And the quintet of tracks that form side two are as exciting as watching wallpaper peel (thank you, Tom Waits) and comprise

and authenticity. But his contribution apart, **The Wheel** are a fine, punchy little band and not to be missed by any rocker who has a little country in his soul. [B: 1]

Lou Reed's always been way ahead in the controversy market. His **Metal Machine Music** album of '75 was notoriously over-the-top and had every critic on the block howling for blood. And **Street Hassle** (Arista SPART 1045), Reed's current release, is another problem-child, guaranteed to upset not only all of the silent majority but also many of the vociferous few. A patchy affair, mainly formed by life-in-Germany concert cuts—some recorded with a fidelity which can only be described as upper-class bootleg—the album is a New York ghetto trashcan, dirty, grimy, backed against a graffiti-filled wall. Reed's lyrics come basic and X-rated, the characters who inhabit his songs often being no

references to Bobby Fuller's 1966 hit *I fought the law—and I want to be black* which shuffles off to Buffalo while Reed lists all the wrong reasons for changing pigmentation—I want to be like *Martin Luther King* and get myself shot etc, etc. So while I can think of about 101 good reasons why no one should stand within fall-out distance of this particular record, I'd still recommend it. [B/C: 1]. It seems that the Albion Band have dropped all the Morris men and maypoles and now heading where even Steeleye feared to set their rocking clogs. For **Rise Up Like The Sun** (Harvest SHSP 4092), the band's second EMI album—which comes replete with a guest list that includes Kate McGarrigle, Julie Covington, Richard and Linda Thompson, Martin Carthy and Andy Fairweather-Low—is an every which-way affair, strong on experimentation, low on purist satisfaction. I can just imagine the faces down at Cecil Sharp House on hearing Rick Sanders flight his violin above Pete Bullock's synthesiser on, of all things, *Afro-Blue*, the number once given Valhalla status by the late John Coltrane. Me? I'm just thankful that the Albions are such a barrier breaking lot. May their combine harvester always remain converted to a path-clearing excavator! [A: 1]



The Rutles

two mood pieces by Brian Eno, a piece of funk by Amicar (whoever they might be!) and a couple of weirdies attributed to one Suzi, the latter providing a Grace Moore-sings-rock version of William Blake's *Jerusalem* that is so excruciatingly awful that it ought to be released as a single in the hope of perhaps emulating *They're going to take me away* in the bad-taste, lunatic success stakes. [B: 4]

Far more inviting is **Asleep At The Wheel's Comin' Right At Ya** (Sunset SLS50415), a mid-price reissue of The Wheel's first album. They're not a rock band by any means, being little more than just a youthful Western Swing outfit. But they and such bands as Commander Cody and Alvin Crow have a facility for tickling my country-rock palate with more success than maybe Emmylou Harris and some of the more highly publicised canyon cowboys. The remarkable Johnny Gimble, ex-Bob Wills and simply the best damn fiddle-player in Nashville, is around to add impact

more than shadows in a cellar, night people who shun the sun's rays. But for all its griminess, *Street hassle*, the 11-minutes long song that gives the album its name, is as graphic a composition as Reed has ever pitched out of his shuttered basement. Aligning his strangled vocal to a cello headed riff, Reed unfolds a low-life love story that involves the sexual act, the death of a female companion from a drug overdose, and the fears and desperation that follow. Totally horrifying—*Why don't you grab your old lady by the feet, drag her out in the dark street—and by the morning she's just another hit and run*, one denizen of the cellars advises on the discovery of the body, it's a gripping narrative and brilliant in its twisted way. Elsewhere, things pall more than a mite—songs such as *Real good together*, *Shooting star* and *Leave me alone* being muddily recorded nothings better left in the reject cans. But there are other compensations on *Hassle*, such as *Dirt*—all mind-numbing percussion and oblique

TAIL-ENDERS

Original Soundtrack—**Shut Down** (Capitol CAPS1018) Golden oldies revived (or revved up?) for Curtis Clark's hot-rod film. It includes The Beach Boys' *Little deuce coupe*, The Knights' *Hot rod USA*, The Super Stocks' *A guy without wheels* and out-of-placers such as The Chantays' *Pipeline*, a surfing song, and The Ghoul's *Little old lady from Transylvania*. To quote the Beach Boys, it's *Fun, fun, fun*. [B: 2]

Dr. Buzzard's Savannah Band—**Meets King Penet** (RCA PL 12402). Strangely flat vocals, disco rhythms and big band sounds right out of the Miller, Kenton and Ellington scrapbooks. Intriguing—but somehow things don't quite work out as they should. [A: 3]

Jefferson Starship—**Earth** (Grunt FL12515). No doubt this'll be the Starship's all-time humdinger in the sales-stakes, and Grace Slick will be able to meet Fleetwood Mac's Chris McVie and Stevie Nicks over a bucket of champers and discuss how things are going on Wall Street. Then, if she can stand the sound of Marty Balin screaming *Fire* in totally hare-brained fashion and not wince at the wimpiness on some of **Earth's** other tracks, she definitely somethin' else and entitled to such luxuries. The good news is that guitarist Craig Chaquico is worth tuning into and that the opening *Love too good* is likeable enough Gene Page arranged singles fodder [B: 2/3]. And that's all, folks!

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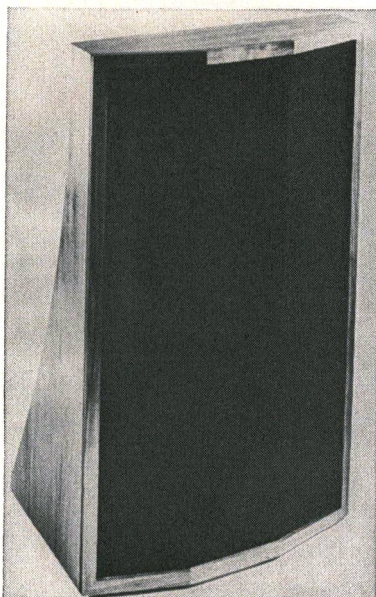


circuitry born of radical thinking. It is clearly a no-compromise product which by virtue of its unchallenged sonic superiority must make some of the established names in the audio world wonder what books they've been reading!

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JAZZ



Ken Hyder

THIS month as promised I'm taking a look at some of the new avant garde releases. There's a popular misconception that free music is free. Perhaps the intention in many early participants was to trade rhythm and changes constrictions for freedom. The liberating idea was that you could play anything that came into your head. Indeed some Dutch and German musicians still manage to do just that. But for most free musicians what happened was something many of them were trying to avoid—stylisation. Instead of the old rules there were the new rules. In some circles it might be regarded as uncool to play simple direct rhythms or a recognisable melody. Musicians tended to group together to form a whole number of different schools of free playing. The styles would vary from the predominantly upfront, high dB, supercharged German school to an ultra spacey, quiet, almost delicate plinky-plonk scene. Some of the Low Grade isn't even completely spontaneous, for there are often prearranged passages thrown into spontaneous improvisations to provide a dramatic or often humorous contrast. The trouble with a lot of free music is that it stays on one dynamic or emotional level for a very long time. It's only the very best players who can sustain my interest for example. There are a lot of readers of this column who may not have heard any Low Grade at all, and who may be reluctant to even try and get into it. A few people have said to me that they're too old to check it out. Let me say that one of the most innovative musicians on this scene, Derek Bailey, is around 50 years old. But don't check it out by giving an album two minutes' listening in a crowded hustling record shop. If you've never come across free music before, it's best to get yourself in a relaxed, open frame of mind first. And please don't think of the first album you hear as being representative of the whole scene. That would be like saying all modern jazz sounds like Miles Davis.

Some of **Erdmännchen** by guitarists Hans Reichel and Achim Knispel sounds very structured.

It reminds me of a faster moving Philip Glass. A few of the pieces have, underpinning them, a kind of rollicking, bouncy, almost blues guitar rhythm going on. Indeed, Reichel plays a special homemade guitar which often sounds like an avant garde blues axe. These two musicians are extremely dextrous, for without overdubbing, they make their two guitars sound like four or five. Unlike a lot of free music, there's a lot of warmth here. I like it a lot. Check it out on Free Music Production FMP 0400 [A: 1/2]. The Globe Unity orchestra is quite different. They are made up of many of the heavy players of the free scene. Many of them are German and contribute much of that special kind of German energy to the overall music. They break up their improvisation with for example incredibly raucous marching tunes. Their **Evidence Volume 1** on FMP 0220 is from a live performance. The title

1]. Stevens' **Touching On**, Vinyl VS 105 [A: 1/2] is another type of free music. Here, four musicians come together to play group music with the understanding that it will develop within the context of a rhythmical basis. Ron Mathewson's bass makes a lot of the running. It's agile and accurate. He has a lot of facility, but uses it well. Guitarist Alan Holdsworth also has facility, but for my taste he abuses it. Stevens, and pianist Jeff Young play with astounding humility. On 'Home' the quartet takes on an ECM air with a gentle, restful ballad treatment. A nice album. At times **Warm Spirits: Cool Spirits**, also on Vinyl, VS 101 [A: 2/3] works, at times it doesn't. Colin McKenzie is a fine bass guitarist, but I felt that some of his playing was at odds with what was going on around him. But I did like 'Bye Mongs', a tribute to the South African trumpeter, Mongezi Feza. The other

and saxophonist Charles Brackeen. They each have their own space, and make the trio sound larger somehow, without swamping the sound. Some of Motian's compositions are attractive and compelling, like 'Asia' on side two. It's a universal folk song. Put this one on your shopping list. One of the differences between Motian's album and Kenny Wheeler's **Deer Wan**, ECM 1102 [A*: 2] is that while there's an element of prettiness to both of them, Motian's album also has life force. In spite of an impressive line-up of ECM heavies, the end result sounds like musicians doing a session. You don't sense a lot of commitment. Which is a pity, for Wheeler is himself a very fine musician who is capable of producing something more meaningful. Unfortunately much the same could be said about **Dom Um Romao with OM**—a tedious jazz/rock band, or should I say 'bland'? The same textures are padded out for minutes on end. Um Romao was cutting it with Weather Report. He ain't cutting it here on JAPO 60022 [A*: 3].

Now, let's get something on the turntable to cheer us up. Aye—**Live at the Bijou** a double live set from Grover Washington Jr, Kudu SOULD 002 [A: 1/2]. Of all the jazz/funkers, Washington is the one who makes the fusion seem most relaxed and natural. When you listen to it, it doesn't matter whether it's jazz or funk—it's just very enjoyable music. It's functional. Liket'sgroovingmusic, doing the housework music, playing with the kids music, dancing music... happy music. It doesn't pretend to be anything other than it is. The sidemen aren't particularly well known, but I got off on bassist Tyrone Brown and drummer Millard Vinson. The Strange Brothers are young Danish musicians, and John Tchicai is, well, an ex-Coltane/Shepp sideman. Their getting together on **Darktown Highlights**, Storyville SLP 1015 [A/B: 2] is a success. At times the SB's lack of experience comes through, but they make up for any deficiency in the year's department by powerful energy and a loyal commitment to their music. The music is varied and is influenced by a few styles. But mainly it's hard swinging sinewy stuff. Worth a good listen. Recently I used a few lines to enthruse over Sarah Vaughan. This time I'll be brief. The **Two Sounds of Sarah Vaughan** is a double album of presumably re-released material, on Vogue VJD 543. One album sets her up with a small band, the other with a big band arranged by Benny Carter. It's magic [B/C: 1*]. Benny Carter also crops up on Volume One of **The Tatum Group Masterpieces**, on Pablo 2310 732 [B/C: 2]. Now, Tatum and Carter are Tatum and Carter and that's fine. But unfortunately Louis Bellson is Louis Bellson and not Jo Jones.

Pity.



The Crusaders

track is a special loose arrangement of the Thelonious Monk tune where drummer Paul Lovens comes across beautifully as a kind of avant garde Art Blakey [B: 2]. One thing that the Globe Unity team have that isn't evident on **Sparks of the Desire Magneto** is a surfeit of on-top-of-it confidence. I've liked a few things on the Bead label in the past, but I didn't get off on this one by Richard Beswick, Philipp Wachsmann and Tony Wren. I didn't get a strong, positive vibe from it at all. It's on Bead 7 [B: 2/3].

The Longest Night, by John Stevens and Evan Parker, is another matter. The contrast is remarkable. There's no hesitancy at all. The energy and ideas are evident right from the start. The music—although no simple direct rhythms are used—swings, with Stevens' drums and Parker's soprano moving as one. This is intense, spiritual music which bears a lot of listening. There's a very natural warm feel about this record—a masterpiece of its kind. Get it on Ogun OG 120 [A/B:

players in this quartet are Keith and Julie Tippett and Trevor Watts. If you have any difficulty getting any of the above albums—apart from Bead—they're distributed by CRD.

I wouldn't say that he was underrated by his own generation—but I wonder how many younger fans are aware of monstrous magic of old man Jo Jones? **The Essential Jo Jones**, a double album on Vogue VJD 542 [B: 1] makes it easy to catch up. And there's a splendid opportunity to check out that magnificent rhythm team of Jones, Count Basie, Freddie Green and Walter Page. When it comes to brushwork, Jo Jones just has to be the pioneer. Lovely music.

Paul Motian is another kind of drummer, but like Jo Jones, Motian has taste. He's a subtle player. He plays in such a way that you don't always notice that he's there—but you'd notice if he wasn't. His **Dance** is by far the best of the current ECM releases—ECM 1108 [A*: 1]. We find him in the company of just two other musicians, bassist David Izenzon

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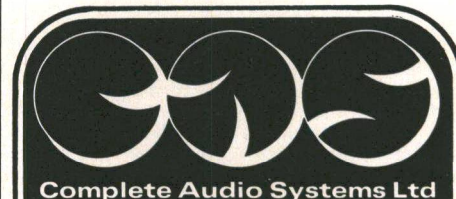
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LIGHT



Peter Gammond

THE Barber-Shop tradition of close harmony singing, from quartet to choral proportions, appears to have originated in England in Shakespeare's time when a lute would be kept to hand for the customers to while away the waiting time with a little improvised music-making. We might assume that Welsh barbers' shops were particularly well endowed with the right sort of talent. By the mid-18th century the activity had formalised into Catch and Glee Clubs with an annual prize awarded from 1763 (see Baptie's 'Sketches of Glee Composers') when the winner was William Hayes' 'Melting airs soft joys inspire'. The art is recorded in 'The Romantic Englishman' (Meridian E77002) reviewed in the Classical section this month. The barber-shop tradition thrived again in the United States, particularly in the gold rush era and areas, where there was little else to charm the musical ear. It became an established tradition in America prior to World War II and a 'Society for the Preservation and Encouragement of Barber-Shop Singing in America' was formed in 1938. It is now something of a national craze and its annual competitions have been seen here on TV. With this influence the barber-shop tradition has come back to its home country and many quartets and choirs now flourish here with the attendant national competitions.

Saydisc of Badminton, Gloucester, seem to have appointed themselves the main outlet for barber-shop recordings and now offer several discs of 'The Best of British Barbershop', a couple of which we reviewed recently. A fresh batch received includes **Barbershop Convention—Leicester '77** (Saydisc SDL281); **Love is a Song** (SDL286) featuring The Fortunairs, The Barrytones and The Five Bridge Four, all formed in the 1970s; and **Five in a Bar** (SDL287), a quintet formed in 1973 near Bath. While the cynic may note a certain sameness about barber-shop activities, the enthusiast will enjoy this feast of close harmony. One can only say that the level of accomplishment

is uniformly high, the repertoire fairly predictable, the recordings excellent. The first album is half devoted to choral singing presenting the winners and runners-up of the Leicester Convention last year which adds an extra spice of interest in allowing us to make our own judgments [A: 1].

Ernest Newman said of Marjory Kenney-Fraser's three volumes of *Songs of the Outer Hebrides* published in 1909, 1917 and 1921, 'for sheer beauty of invention, sheer loveliness in the fall of the mere notes, some of these melodies are without their superior, whether in folk-song or art-song'. Some, like 'An Eriskay Love Lilt' have become well-known, but it is a rare treat to have a whole LP of them, twenty items in all which are collected under the title **Land of Heart's Desire** (Meridian E77008, £2.99) and sung by Alison Pearce (soprano) with David Watkins (harp). Alison Pearce is a young artist making a reputation and winner of many awards. She sings with intelligence, involvement and variety. I thought the harp was sometimes over-recorded in relation to the voice but the general sound is clear [A: 1].

The keen collector of military band music will find considerable interest in **Famous Czech Marches** (Supraphon 114 2014, £2.99) played by the Czechoslovak Military Band with great zest and precision. Material new to British collectors includes bright pieces like Pecké & Smatek's *The Variety Artist*, a march by Fučík and some useful sleeve dates. A slightly overbright recording [A/B: 1]. The more general collector will find many stirring and catchy items to enjoy in **The Very Best of Military Bands** (EMI Studio 2 TWOX1070, £3.89)—18 tracks by the bands of the Royal Marines, Artillery, Engineers, Scots Guards and Royal Air Force. A uniformly high standard averaging [A: 1].

The name of Jaromír Vejvoda (b. 1902) will not be too familiar. He wrote *Skoda Lúsky* (better known to us as *The beer barrel polka*) hence the title **Beer Barrel** for a record of his polkas and waltzes played by the Jindrich Bauer Wind Band (Supraphon 114 1264, £2.99), a programme of gaily lugubrious music with tuba under-currents. An enjoyable novelty [A: 1]. **Midnight Music** by Ken Moule and the Full Score Orchestra (BBC Records REC305, £2.35) is a very pleasant album of swinging modern pieces by Legrand and others, including two by Moule, tastefully and interestingly arranged with the individual Moule touch [A: 1]. I wish we could have his classic *Jazz at Toad Hall* back in circulation. An interesting sound from David Snell in **Harp in Harmony** (BBC Records REC311, £2.35), harp-dominated arrangements of pieces by Legrand, Simon and other with-it composers [A: 1].

folk



Paul Oliver

COMBINING folk music with a holiday is a very pleasant way of spending the vacation, and there was a time when you could travel in most European countries and hear good musicianship and singing by visiting the villages around the main centres. The tourist industry has caught up with this innocent pleasure and you can be reasonably certain that you'll be offered a 'barbecue' with 'folk-loric ballet' and mediocre performers, wherever you go in the more familiar tourism centres. But towards the Balkans, the Black Sea and the eastern Mediterranean there's still much good music to be heard.

I'm not sure that the **Anthology of South Bohemian Folk Music** (Supraphon 0 17 1745) gives an accurate impression of the music to be heard in Czechoslovakia today, because most of these recordings were made in the 1950s. At that time, however, a good many of the performers were quite young and hopefully some of them are still singing and playing. The album has been sensibly compiled in groups of related content: the first is devoted to bagpipes and leads us in from fairly familiar ground though the sounds are not that similar to the Scots/Irish tradition. The solo *Rejdovák* is particularly fine but I could do without the combined efforts of fifty bagpipers in unison. 'Customs and Rites' follow with a charming song by children of Pécin, *Tell Us Landlady*—though what the custom is remains unclear. Christmas themes are unexpectedly represented by *The Herdsman's Bugle Call* and other instrumentals; 'Herdsman's songs and calls' with a gentle, spacious air, make an agreeable set. The celebration of weddings introduces some older singers and a cheerful folk band playing a wedding march—it sounds more of a dance. A folk puppeteer performing three roles from a puppet version of *Doctor Faustus* is less interesting than the description suggests. The record concludes with veteran singers performing items like *I Owe Money at the Beer Pub* or *Merry Little Churchyard*. Over forty titles on one LP means rather

brief snatches, but a good introduction to Bohemian song. [H: 1/2]

Ethel Raim has been collecting in the eastern European countries for years. Her **Village Music of Bulgaria** (Nonesuch Explorer H-72034) has been extremely well selected and includes the remarkably inflected, duet of long-line singing, *Potajno Rada Godiva*, nearly six minutes' duration, and a fast, exciting orchestral instrumental *Krivo Horo*. Much of the playing and singing is in unison, often employing unusual metres. Complex both melodically and rhythmically is a duet on *kaba gaidi*—the Bulgarian bagpipe—*Svornato*. The instrument is featured on three tracks, including what is for me the outstanding performance: Valya Balkanska's powerful vocal *Izjel je Delyo hadjutin*. Her soaring voice with splendid ornamentation against the sombre bagpipes is spine-chilling. The Bulgarian folk music tradition is threatened as the older musicians lay aside their instruments, but this young woman is likely to be performing for a long time yet, and on this evidence must rank as one of the great folk singers of our time. [A: 1]

Turkish elements from the Ottoman occupation are evident in Bulgarian music, but **Folk Music of Turkey** (Topic 12T S333) with its fiddles and sharp drumming sounds distinctly more alien. Collected from locations throughout Anatolia and the Black Sea regions by Wolf Dietrich this anthology has a markedly rural character, with small bands playing fast three-step dances, and some occasionally throaty singing. The *Cattle Roads* is a swinging performance on the *saz*, a long-necked lute, which is also played in a contemplative long-line style on *Avsar Song*, which entreats nomads to settle, by Mursai Sinan. Sinan is only 20 years old and it is encouraging to note that all the performers on this album are under 35. It comes with copious notes and technical discussion. [B: 1]

If you go for this kind of music you could follow up with **Turkish Village Music** (Nonesuch Explorer H-72050) which has more playing on the *saz* and opens with a spirited wedding dance played on *zurna* (double reed oboe) and the two headed *davul* drum. This collection is more varied, including a religious ring dance, the *Kirklah Semah*, and examples of folk poem, lullaby and instrumentals. External influences picked up from the radio and in tea-houses are more evident in this set; the two complement each other very well. Recording better, notes less substantial but still useful. [A: 1]

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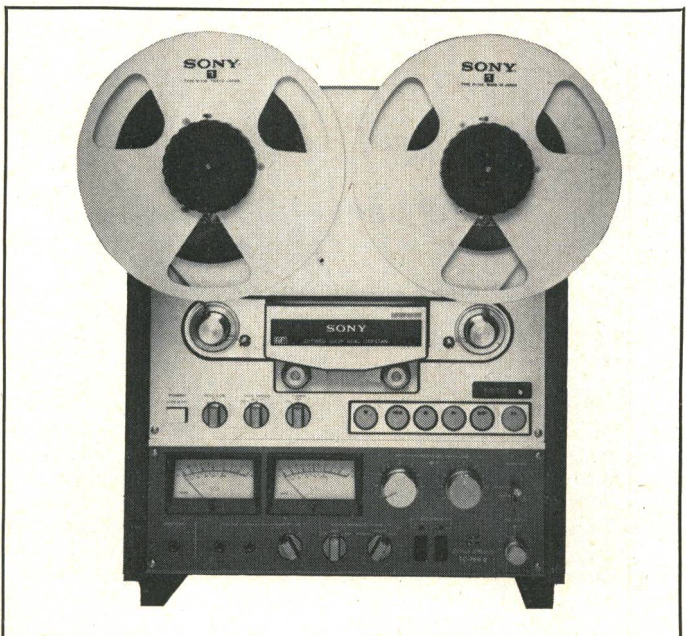
Martin Colloms



PIONEER TAU11/RTU11 (RT 2022)



REVOX B77



SONY 766



TECHNICS RS 1500 US

THE last year or so has seen the emergence of a new generation of high quality and inevitably costly open-reel tape decks, of which four are investigated here. As the price span is quite large—ranging from an estimated £500–600 for the Revox and Sony models to £850 for the Technics and £950 for the basic Pioneer assembly—these units are not strictly comparable, although their relative performances are nonetheless interesting.

All four subscribe to the so-called 'pro-

fessional' format, namely 26.5 cm diameter maximum reel capacity with at least two high speeds (19 and 38 cm/sec), and a two-channel half-track format on 6.25 mm ($\frac{1}{4}$ in.) tape. However, strictly speaking they should be called 'semi-professional', as although with correct alignment they are essentially capable of master quality recordings and hence could be used in a professional two-channel application, they do differ from true studio machines in several respects. These differences relate more to professional

recording practice than to absolute sound quality; in addition to the greater precision and ruggedness demanded of a deck designed for continuous duty, the input and output connections of professional machines are generally balanced-line with Cannon or similar type sockets. In contrast, the review models are all unbalanced, with phono and DIN type inputs and outputs, plus lower line levels.

Specific features characterise each deck.
to page 148

The Revox B77 reviewed is the 'high speed' version with IEC equalisation, while the Pioneer may be switched to operate in either IEC or NAB at the higher speed. The Technics and Sony are both fixed in NAB. (IEC equalisation allows a little more treble boost on record than NAB, while the consequent relative reduced treble on replay endows the IEC machine with a couple of decibels less replay hiss.)

Both Technics and Sony decks have a second built-in replay head which allows the replay of $\frac{1}{4}$ -track stereo tapes—an important point for the purchaser with an established tape library. The Pioneer will also play $\frac{1}{4}$ -track tapes, but less conveniently via the interchange of complete head-block assemblies. But this substitution also allows the deck to record in the $\frac{1}{4}$ -track format and, indeed, if a second preamp/control unit is employed, full four-track, four-channel working is possible with the Pioneer. Versatility is clearly the keynote of this unusual recorder.

Other versions of the decks evaluated are also available, but the test results for the review machines can be taken as broadly indicative of performance of the other versions, with the usual allowances made for lower speeds, differing equalisations and/or smaller track widths. For example, the Sony 765 represents the 9.5/19 cm/sec version in a 4-channel format; likewise several models of the Revox B77 are or will be available shortly, including NAB and slow-speed $\frac{1}{4}$ -track versions.

All the decks have full relay or solid-state control of transport functions, with the required modes selected by light action buttons which are duplicated, if required, by cable-connected remotod control units. The delayed logic systems incorporated also allow sequential and random actuation of any function except 'record' (for which the usual interlocks are provided), without confusion or any tape mishandling. Other common features include a basic system design for vertical operation, although the decks can be used horizontally if desired. However, the controls, tape paths and meter systems are all certainly most accessible to hand and eye if the machines are vertically positioned on a rack or shelf of convenient height.

Tests employed

The results table (p. 153) shows a mixture of established tests and some newer and/or less well-known ones. The CCIR ARM weighting has been employed here for signal-to-noise ratios (2 kHz reference unity gain), this corresponding closely with the subjective noise effect. In addition to wow and flutter readings (given in the table), the phenomenon of scrape flutter at high frequencies has also been investigated and is shown in a series of spectrum displays centred on 10 kHz. In extreme cases this is manifested as a tape squeal as it scrapes over the head and guide surfaces, and if significant it can degrade high frequency reproduction. The clipping margin of the record and replay amplifiers was also checked, with reference to these decks' potential use for live recording, as it is essential that the musically less damaging tape saturation provides a barrier to maxi-

mum recording level. A clipping level well beyond tape overload ensures that future high performance tapes will be exploitable. Since the decks are to the professional format, their azimuth and replay alignment were examined; this is important where tapes are transferred from one machine to another, or when a deck is to be used for replaying mastertapes.

Some work was also carried out to determine which tape brands gave the best results. An assessment of the mechanical noise level was also made; on location none of the machines would be found troublesome, but in a quiet domestic environment with the decks fairly close to the listener, some mildly disturbing effects could be detected. Correctly adjusted for reel height, etc, none of the machines produced noticeable tape transport noise (scraping on guides, etc), but various other sounds were sufficiently audible to make one consider relocation of the offending deck behind a sofa or in a cupboard. For example, the Sony emitted a cyclical 100 Hz supply-related hum from the reel motor, which was accentuated at the lower speed, while a mild swish on the Pioneer at high speed became an audible capstan motor hum at the lower speed. The Technics was undoubtedly quieter, with all the direct drive motors below audibility, but a mild hum could be detected, emanating from the mains transformer. The Revox was similar to the Technics in noise level, although the sound produced was arguably more annoying, in the form of capstan tachogenerator whine. None would obtrude when listening at realistic sound levels, but if located within a metre or so of the listener and playing at low volumes, all were audible or just audible in use.

The frequency response curves generally represent overall record/replay performance, the exception in each case being the plot from a spot-frequency 19 cm/s NAB calibration tape on replay only. Some references in the text to minor response errors must be read in conjunction with both the main record/replay plots and the replay calibration curves for full understanding of the situation. The main curves are plotted at both -20 dB level (showing L and R separately) to give the practical working response, and at 0 dB to reveal any limitations there may be at high frequencies at peak modulation. Crosstalk curves are not included, as L/R channel separation is in all cases more than adequate for stereo requirements.

Other points common to all four machines are features which are now taken for granted with high quality decks. For example, a three-motor transport, one for each reel in addition to the capstan. Three magnetic heads are also employed—erase, optimum record and an optimum replay. Good tape handling goes almost without saying, and all have tape back-tension switches to allow for small-core reels; the exception to this is the Technics, whose special tensioning will accommodate these.

The decks all employ metering with essentially VU ballistics, i.e. an averaging sort of meter which under-reads by some 8 dB or more on short transient peaks. 0VU roughly corresponds to Dolby level (185 nWb/m), and as the decks will accept 10 dB

or more level above 0VU before the tape overloads, there is enough in hand to record up to if not a little beyond this level on music, for maximum signal-to-noise ratios. In addition, the Revox includes a +6 dB peak indicator which is in fact rather conservative and may be left to blink repeatedly on the loudest passages without significant distortion. Pioneer offer a helpfully expanded dynamic range meter extending from -40 dB to +6 dB, while the Technics possesses a 3 dB sensitivity reduction button to extend the meter scale to +6 dB VU.



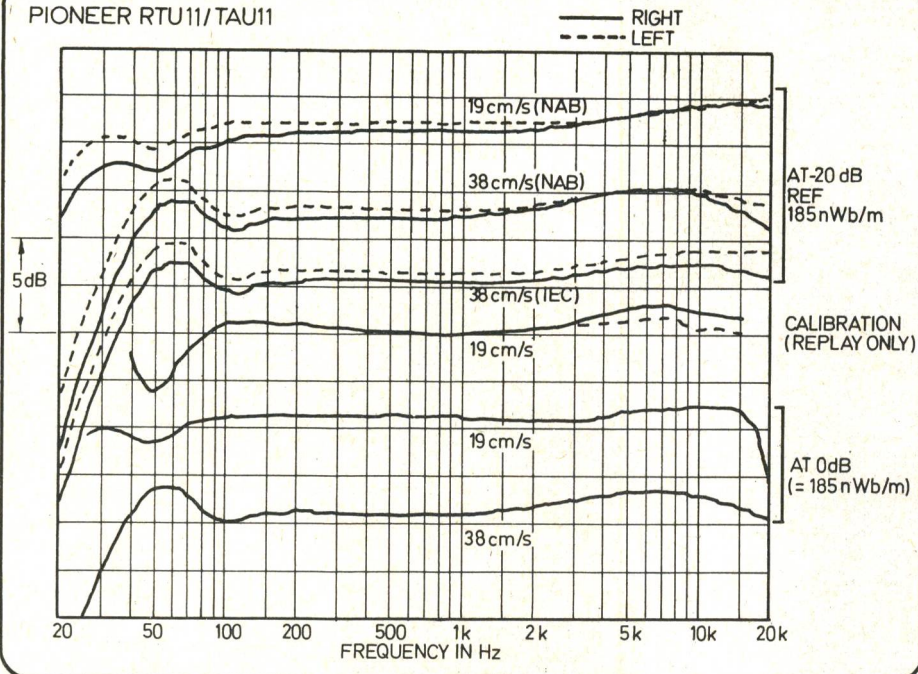
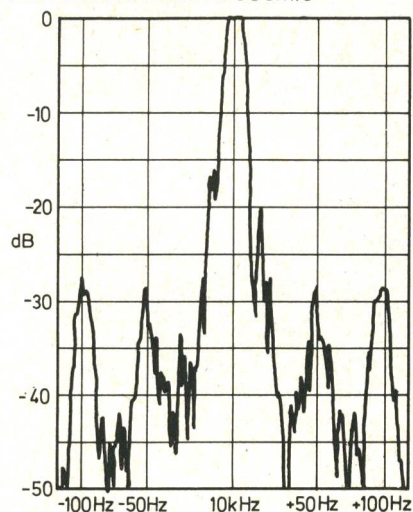
Pioneer RT2022; (RT2044-four channel)

DESIGNATED individually as the RTU11 transport and the TAU11 amplifier units, the above overall legend is applicable for this dual combination. In the past, Pioneer have not been particularly noted for their contribution to the tape field, and therefore this deck comes as somewhat of a surprise: considerable thought has been devoted to the system concept, and as such it is highly versatile.

Without factory modification or lab alignment this deck can, with an additional head-block and control amplifier, perform in stereo/mono record or playback modes, $\frac{1}{2}$ - or $\frac{1}{4}$ -track format; four-channel play/record with $\frac{1}{4}$ -track; NAB equalisation at 19 cm/sec and 38 cm/sec speeds; IEC equalisation at 38 cm/sec, with cross-dubbing, echo, multi-track and sound-on-sound. To aid multi-tracking, the record heads may also be used for monitoring to allow accurate synchronisation of the second track; furthermore, several self-correction features are built into the transport section. A test oscillator with 1 kHz and 10 kHz tones allows selection of optimum tape equalisation and bias settings, this oscillator together with the bias settings being adjustable from the front panel, protected by a removable smoked Perspex cover.

For four-channel operation the second TAU11 unit clips beneath the first by means

PIONEER RTU11/TAU11

PIONEER RTU11/TAU11
FLUTTER ANALYSIS AT 38 cm/s

of tensioned latches, with recesses provided in the top panels to stow the interconnecting cables. Almost every input and output socket is duplicated, and when the four-channel system is fully assembled the rear resembles a telephone exchange! However, Pioneer have thoughtfully supplied colour-coded cables so that links may readily be traced. Several inputs and outputs are also brought forward to the front panel by means of jack cables, so that supplied signals may be quickly routed from one track to another.

Mechanically, the deck is robustly constructed with a die-cast frame and a 5 mm thick machine alloy main bed-plate. Two eddy/induction hybrid reel motors are used, plus a hysteresis synchronous capstan motor driving the flywheel via a resilient belt. Damped tension arms smooth the tape transport and the heads maintain contact

with the tape by back-tension alone. A flutter roller is also incorporated. The side panels are finished in black leatherette; their appearance, reinforced by the massive carrying handle and chrome latch fittings, visually suggests location recording rather than a domestic hi-fi installation.

Performance

Used exhaustively for a number of recent large group tests as a master tape replay source, this deck has proved dependable. No problems were encountered in use, the in built calibration facilities proving invaluable when different types of tape were tried. The sound quality on all settings and speeds was stable and audibly free of wow and flutter, and it replayed master tapes well. Some slight degree of response unevenness could occasionally be detected at the lowest frequencies, but was only apparent on the most demanding organ passages.

From the results table it can be seen that the wow and flutter recorded by the test DIN peak method over the complete record/replay cycle was exceedingly low at 0.015% for the high speed, and a fine 0.04% at 19 cm/sec. These results compare very favourably with the specified RMS weighted values of 0.06% and 0.09%. However, from the narrow-band spectrum analysis for flutter, with the central peak representing the 10 kHz fundamental tone, two pairs of sidebands can be detected at -30 dB. These are 50 Hz and 100 Hz distant, and are almost certainly mains supply period breakthrough from the hysteresis capstan motor. Beyond ± 100 Hz the trace clears down to about -50 dB. Clearly the filtering action of the belt drive could be improved, as this degree of flutter can produce a mild coarsening effect in the reproduced sound.

The ± 3 dB frequency response specification was also conservative, with the overall record/replay response fitting within half

these limits. However, a 1 dB channel imbalance was noted at the higher speed above 5 kHz, but this could be corrected by the adjustments provided. Most of the response deviation occurred at low frequencies, due to head-contact wavelength effects. For example, the left channel record/replay response at 19 cm/sec met ± 1 dB limits from 60 Hz to 1 kHz, and could be even better with a touch of bias adjustment. The published curves were taken on the fixed settings as recommended for Maxell UD50; in fact a variety of tapes can be used with this deck, including for example Scotch 206 and Agfa PEM 268. The replay calibration at 19 cm/sec can be seen to fit ± 1 dB limits, 100 Hz-15 kHz, this including calibration error.

Left and right responses balanced in general to within just over 1 dB on all settings, with the full modulation response at Dolby level showing minimal compression, at an insignificant 0.5 dB, 20 kHz/38 cm/sec NAB, and a fair 4 dB at 19 cm/sec. Clearly, the higher speed will allow maximum headroom at higher frequencies.

Record/replay noise levels (CCIR ARM weighted) were good, if not as fine as those returned by the B77. These differences are not attributable to replay amplifier noise, since this is some 10 dB better than the bulk-erased tape noise; rather they are due to the different tapes used for measurement, in addition to cumulative differences in oscillator noise, replay head and replay equalisation. With the specified UD60 tape, an 11 dB margin to 3% third harmonic tape distortion was measured, giving a fine overall dynamic range of some 66 dB for 38 cm/sec IEC. At Dolby level, total harmonic distortion was 0.35%, reducing to less than 0.1% below -10 VU: a fine result. A studio class clipping margin was recorded by the electronics, namely +35 dB, ref. Dolby level.

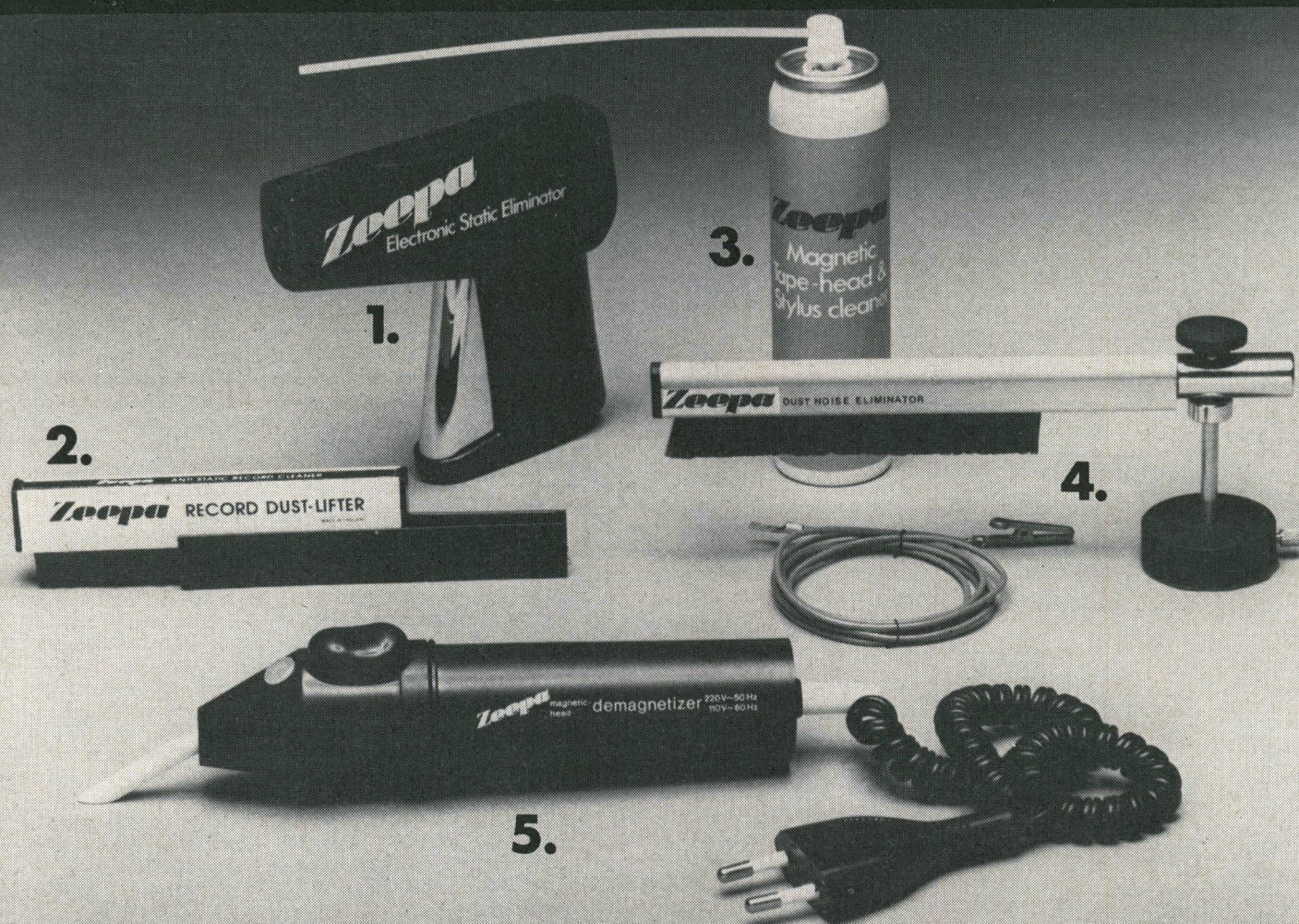
The wind quality was quite good for this class of machine, and the tape handling excellent; my only complaint concerns the excessive delay in starting 'play' after fast-wind is engaged—but perhaps this was a sample fault.



Revov B77

THE successor to the established A77, the B77 represents a development of the older model rather than an entirely new design. Nonetheless, a number of changes have been made, significant enough to

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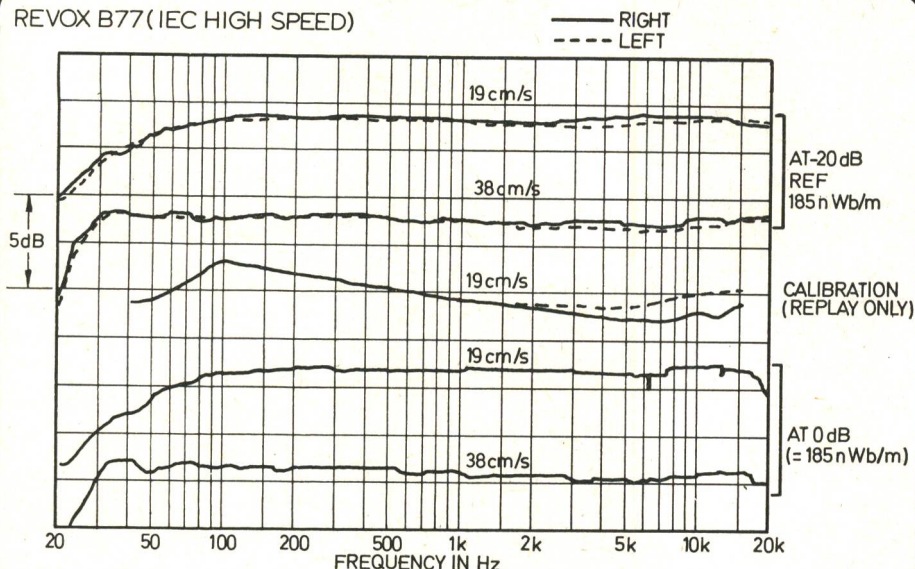
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REVOX B77 (IEC HIGH SPEED)



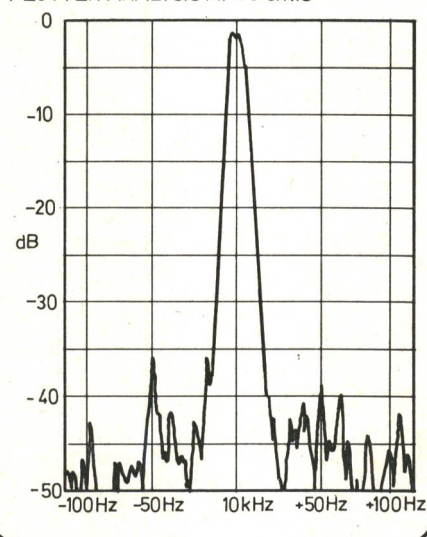
justify a new number designation. But let me say at the outset, that while I had considerable respect for the A77, I did not personally favour certain aspects of its performance, notably poor level matching, premature overload of electronics and poor control ergonomics. However, all these have been resolved in the new model, as well as refinements made. For example, the capstan motor—the famous direct-drive tachogenerator design—has been further developed and is now closer to that of the Revox A700. The deck will also accept an accessory that allows fine control of capstan speed and hence of musical pitch, when required. Improvements to head quality have resulted in increased life as well as a more uniform frequency response, and the transport section has now eliminated those occasionally troublesome relays, with their function now carried out by semi conductors, with an expected increase in reliability.

In addition to all the basic features, certain more specialised functions are included in this deck, their use facilitated by a clear Instruction Manual and internal switch connections. For example, as well as the edit button which allows the tape to be brought into contact with the heads for manual and powered location of edit points, a splicer is also built into the front deck plate. Very comprehensive input and monitor source selections are also possible, such as those permitting switched transfer of the replay of one channel onto record of the next, with simultaneous mixing of flutter-echo effects, sound-on-sound, and overdub material from other inputs, including microphone.

Two headphone sockets are provided, with adequate levels to drive high impedance 'orthodynamic' types as well as the more sensitive moving-coil varieties. A headphone volume control (monitor level) is present, although the line outputs are semi-fixed (preset controls on the rear panel). The level meters sensibly indicate the modulation depth going onto or coming off the tape, and are not affected by replay level adjustment.

The review model was set for the new Revox 621 tape, which bears a close re-

REVOX B77 FLUTTER ANALYSIS AT 38 cm/s



semblance to the latest high-performance tape from Scotch, namely 256. Other brands were also used, including Scotch 207 (-3 dB at 20 kHz), Agfa PEM 368 (-1.5 dB at 20 kHz), Scotch 256 (the same as for 621), and finally Maxell UD60 (+1.5 dB at 20 kHz). Clearly, all these could be accommodated with slight bias and/or record equalisation adjustment.

Performance

With the specified 621 tape, the record/replay response at 38 cm/sec was outstandingly uniform, and demonstrated excellent channel balance. The frequently encountered low-frequency irregularities (see Pioneer and Technics) were almost invisible here; at 38 cm/sec it was better than ± 1 dB, 25 Hz-20 kHz, the same limits also pertaining to a 45 Hz-20 kHz bandwidth at 19 cm/sec.

Wow and flutter were low at 0.03%, 38 cm/sec, and satisfactory at 0.07%, 19 cm/sec. However, a mild imbalance in replay equalisation of 1 dB was observed at higher frequencies, this being present at both speeds.

While this is well within spec tolerance, if close replay balance is deemed critical it may be (and was on the review model) corrected by altering the replay head damping resistor.

Fine record/replay noise levels were also measured, these arising from a fortunate combination of IEC equalisation (which compared with NAB, helps the high-speed result), the new lower noise tape, and a low-noise bias oscillator with a good waveform. In conjunction with generous headroom in the electronics and a tape 3% third harmonic point at +11 dB, these gave an overall dynamic range of 70 dB at the high and 67 dB at the low speeds; both excellent results. It can be seen that Dolby or similar noise reduction processes are not really necessary with machines of this calibre.

Total harmonic distortion was around 0.2% at 1 kHz, Dolby level (-1.5 dB on the Revox meters) falling to 0.1% at 10 dB and below (off-tape results). A small 1 dB compression occurred at 20 kHz when modulated to Dolby level, which proved that the wide dynamic range extended to the higher frequencies, while the 2.5 dB compression at 19 cm/sec was also good, taken under the same conditions.

The meters were very close to the VU specification, with symmetrical rectification, and were backed up by the accurately set +6 dB peak lights. The latter must be allowed to flash on peak passages or the tape dynamic range will not be fully exploited, and even with them lit the peak distortion was under 1%.

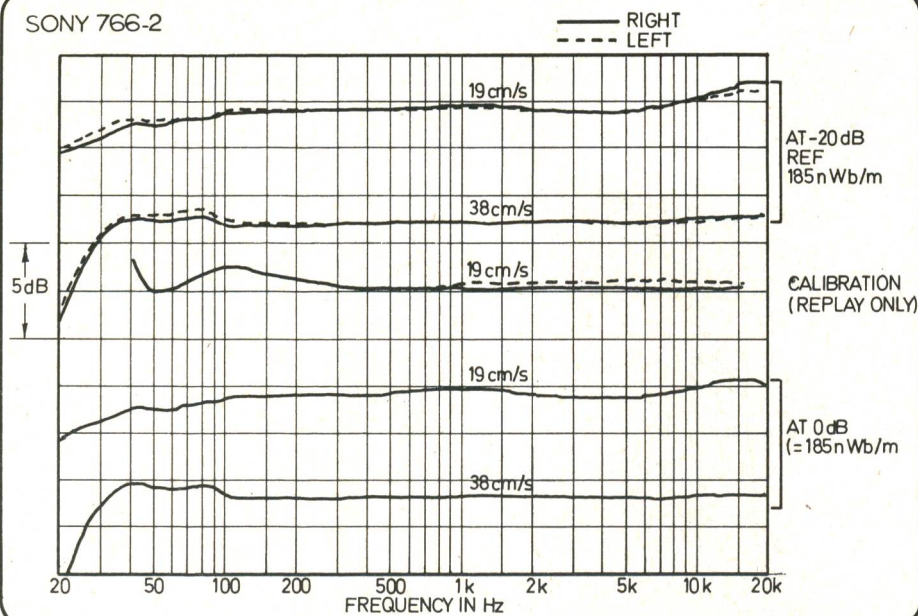
Fast wind was considered to be too rapid for even spooling, the leafed tape edges then proving vulnerable if the reels were not subsequently handled with great care. However, if the recommended Revox (and professional) practice is adopted of storing tape in the backwound form, the spooling is even over the normal 'play' speed and print-through will also be reduced.

The flutter analysis showed a clean fundamental at 10 kHz, with the spurious modulation sidebands falling quickly to the residual at -50 dB. There was no evidence of scrape or high frequency flutter—a defect sometimes ascribed in the past to Revox machines.

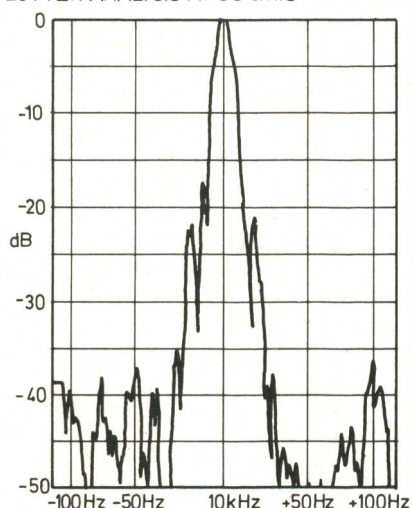
Sony 766

A SUBSTANTIAL machine of excellent finish and with a 'solid' feel, the 766 employs Sony's established dual-capstan tape transport which isolates the section of tape passing over the heads from most reel tension irregularities. The tape path itself is complex, with damped tension arms, rollers and fixed guides, and some practice is required for quick threading. The latter is also impaired to some degree by the high static back-tension. The two capstans have individual flywheels, both belt-driven from one AC powered servo controlled motor using a tachogenerator. The feed spool motor is also servo-controlled to maintain optimum back-tension. This attention to engineering detail undoubtedly pays off in terms of excellent wow and flutter results at

SONY 766-2



SONY 766-2 FLUTTER ANALYSIS AT 38 cm/s



both speeds. The latching transport switches on earlier Sony models have here been replaced by illuminated touch buttons, with full logic control, and a minimum of relays, AC motor switching, etc, accomplished by bridge-linked transistor controls.

Sony's own ferrite magnetic heads are employed, these carrying the 'Symphase' label which indicates that special attention has been paid to phase balance at high frequencies between tracks—vital to matrixed programs but also important in stereo. The low wear rate means that theoretically these heads could last out the life of the machine. With a large in-house tape manufacturing plant in Japan as well as the USA, it is perhaps not surprising that the 766 is compatible with Sony's latest open-reel tape FeCr or 'Dual'—and while this has yet to be fully investigated, it would appear to offer extended dynamic range well as low distortion.

Performance

Excellent wow and flutter readings were recorded at both speeds, and in consequence no audible effects are likely to occur even with the most critical of listeners and the most demanding program. The high frequency flutter analysis shows two sidebands at -22 dB, which were sufficiently close to the fundamental not to disturb it unduly, although it could be argued that the machine would be better off without them.

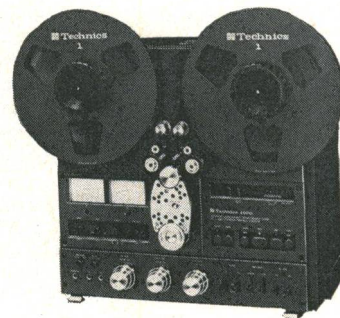
The deck wound tape quite evenly due to its reasonable rate and comprehensive guides. Using Sony FeCr tape, the overall record/replay response uniformity was as remarkable as that of the Revox—virtually flat above 100 Hz. The curves show accurate equalisation, fine channel balance and an extended low frequency response. For example, at 19 cm/sec, the 20 Hz point was only 2½ dB down. Recorded at Dolby level, the high frequency compression was minimal at -1 dB, 19 cm/sec, and infinitesimal at 38 cm/sec. In fact, at a -1 dB point using the high

speed, the response extended beyond 30 kHz!

With a 52.5 dB signal-to-noise ratio and a 11.5 dB headroom to 3% tape third harmonic distortion, a dynamic range of the order of 64 dB was demonstrated at 38 cm/sec, this augmented by a couple of decibels at the slower speed, mainly due to reduced tape noise with NAB replay equalisation. Total harmonic distortion with this tape was below 0.1% even at 0VU—an excellent result.

The meters were slower in response than the standard VU type, and while accurate on constant loud passages, they did miss short peaks on live program, which is where the off-tape monitoring comes in handy. The headphone output would not drive most 'ortho' or high impedance cans adequately, and a moving-coil type will probably have to be used.

Tapes other than Sony FeCr were also tried with this deck, notably Maxell UD50, which when set to 'high' bias and 'normal' equalisation, gave response results similar to those of the Sony tape. On the same settings, Scotch 256 recorded a 1.5 dB lift at 20 kHz. (Note that the optimum UD50 results were not produced with Sony's recommended settings, which were for FeCr equalisation and a medium bias.)



Technics RS 1500 US

THIS award-winning deck demonstrates Technics' expertise in the field of direct-drive motors. In fact, the transport is reminiscent of an established '3M' professional recorder, with a looped 'U' tape path over the heads isolated from the feed and take-up reels by a large capstan as well as a dual pinch-wheel system. The motors of course differ, the Technics capstan being a quartz frequency controlled unit with a massive integral flywheel. This is the tape deck equivalent of the SP10 Mk II motor used in the turntable of the same name.

The precise speed control plus minimal tape slip allows this deck to be fitted with an elapsed-time-indicator scaled in minutes and seconds—a marked improvement over the arbitrarily scaled tape position counters usually employed. The timer is, however, only correct at 38 cm/sec and must be scaled proportionately at the lower speeds (19 and 9.5 cm/sec). In addition, a variable pitch option is included on the front panel.

This recorder is also equipped for direct DC operation from an external 24 V supply—for example, two car batteries or a 24 V

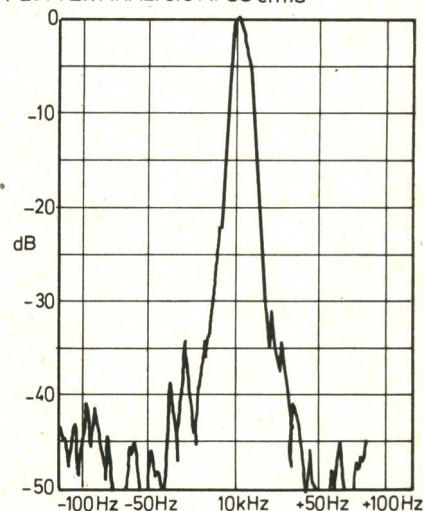
Ni-cad pack—although some limitation on excessive fast winding is apparent in this mode, and the panel lamps are also disconnected to conserve energy.

As with the Sony, the reel motors are servo-controlled, and in addition the RS1500 roller bearing tension arms are air-piston damped. In consequence, the deck attains a stable operating speed in under one second from

start-up. The closed tape-loop also allows a relatively low tension value (80 g), which minimises scrape flutter (mechanical modulation noise) at the same time serving to maintain excellent tape/head contact.

Accessories for the RS1500 include: a sturdy transport case with handles for location use; brackets for 19 in. rack mounting; the DC adaptor; a remote control unit; a

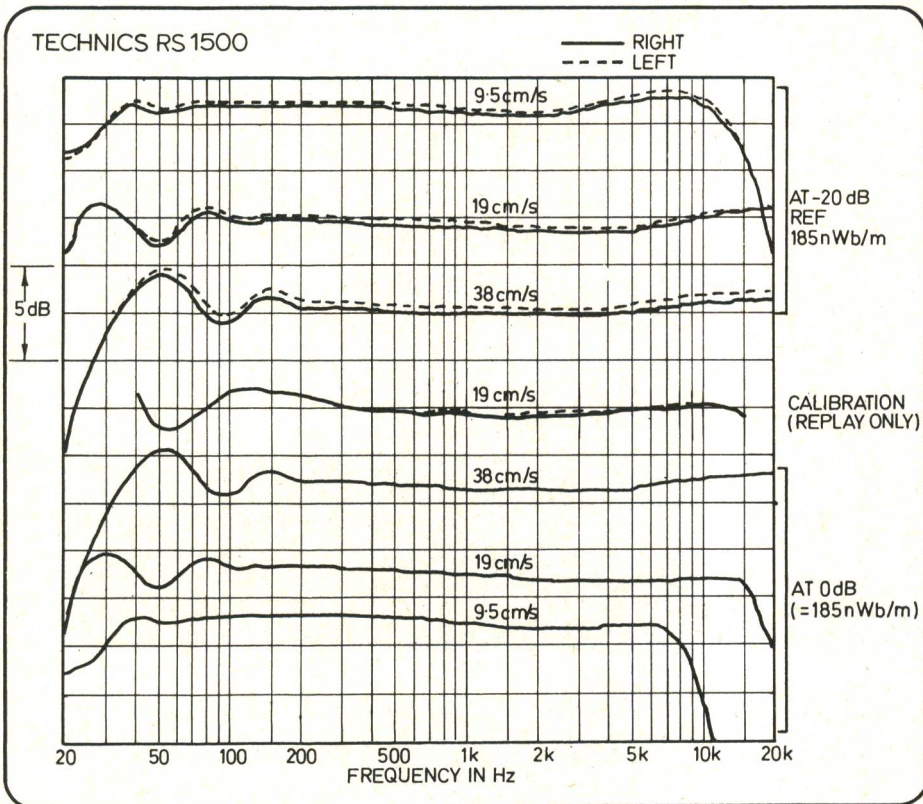
TECHNICS RS 1500
FLUTTER ANALYSIS AT 38 cm/s



transparent cover which can be left on during use; and, finally, optional veneered side panels.

Performance

With superlatives frequent in an up-market product review such as this, the Technics wow and flutter over the record/replay cycle measured an astonishing 0.012%, 38 cm/sec (DIN peak weighted). This was close to my measurement threshold and could actually be better than the figure quoted. The 0.035% reading at 19 cm/sec was still very good, with 0.1% at 9.5 cm/sec proving satisfactory. The latter result was undoubtedly higher than usual on the review



PARAMETER	PIONEER TAU11/RTU11 (RT 2022)	REVOX B77 IEC HI-SPEED	SONY TC766-2	TECHNICS RS1500 US
Wow and flutter (% DIN pk. wtd.) 38 cm/s, 19 cm/s. Record/replay cycle, average figures	0.015, 0.04	0.03, 0.07	0.015, 0.03	0.012, 0.035, (0.1*)
Replay Equalisation accuracy at 19 cm/s, 40 Hz to 15 kHz (includes calibration tape errors). R and L average	+1.5, -3 dB	+1.6, -1.5 dB	+1.5, -0.2 dB	+1, -1.3 dB
Noise , overall record/replay, CCIR ARM wtd. Reference Dolby level, 185 nWb/m. 38 cm/s, 19 cm/s	-55 dB IEC, -54 dB, -53 dB NAB Maxell UD50 +35 dB (38 cm/s)	-59.5 dB, -56.5 dB Revox 621, sim. Scotch 256 +18 dB	-52.5 dB, -54.5 dB Sony FeCr +19 dB (38 cm/s)	54.5 dB, 56.5 dB (55 dB*) Technics (Scotch 207) +23 dB (38 cm/s)
Tape mainly used on test				
Overload level of record/replay electronics	+11 dB, +10 dB	+11 dB, +10 dB	+11.5 dB, +11 dB	+10.5 dB, +9.5 dB, (+8*)
Overload level (3% third harmonic) of tape; 38, 19 cm/s	66 dB IEC, 65 dB 64 dB NAB	69.5 dB, 66.5 dB	63.5 dB, 65.5 dB	65 dB, 66 dB (63 dB)
Dynamic Range , 3% third to CCIR ARM noise floor. 38, 19 cm/s	0.35% <0.1% >75 dB	0.2% <0.1% >78 dB	<0.1% <0.1% >75 dB	0.2% <0.1% >77 dB
Total Harmonic Distortion record/replay 1 kHz 38 cm/s at ref level 0 dB	>40 dB, 90 Hz-8 kHz	>45 dB, 200 Hz-17 kHz	>45 dB, 60 Hz-15 kHz	>40 dB, 20 Hz to 12 kHz
Erase Depth 1 kHz ref +10 dB	±1.5 dB; 40 Hz-20 kHz +1.5, -2.5 dB; 25 Hz-20 kHz	±0.7 dB; 25 Hz-20 kHz +0.5, -1 dB; 45 Hz-20 kHz	+0.7-0.5 dB; 30 Hz-20 kHz ±1.5 dB; 30 Hz-20 kHz	+2, -0.5 dB; 33 Hz-20 kHz +0.5, -2 dB; 22 Hz-20 kHz +1, -1 dB; 30 Hz-12 kHz*
Channel Separation , record/replay ref +10 dB				
Frequency Response , -20 dB, record/replay 38 cm/s 19 cm/s 9.5 cm/s				
Compression at 0VU, 20 kHz, 38 cm/s, 19 cm/s	-0.5 dB, -4 dB -40 to +60 dB 0VU=Dolby level	-1 dB, -2.5 dB -20 to +3 dB peak light at +6 dB -1.2 VU=Dolby level adequate, 2 min low good	-0.25 dB, -1 dB -20 to +3 dB 0VU=Dolby level	-0.25 dB, -6 dB -20 to +3 dB (-17 to +6) 0VU=Dolby level Satisfactory, 3.5 min low good *9.5 cm/s speed
Meters VU type (more or less)				
Fast wind quality, and speed for 3600 feet	3 min satisfactory good		Satisfactory, 3.5 min adequate good	
Mechanical Noise				
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XLM Mk 3	£44-90
QLM36 Mk 3	£18-90
Empire	
2000E1	£14-50
2000E3	£18-00
2000T	£32-75
2000Z	£56-75
Other cartridges by: AKG, Ortofon, Sonus, JVC, Stanton, Lentek, Ultimo.	
PICK-UP ARMS by ADC, Connoisseur, Mayware, Had-	

cock, SME	
HEADPHONES by AKG	
Sony, Stax, Yamaha, Beyer, Howland-West, Sennheiser.	
CASSETTE DECKS	
Aiwa	
AD1250	£129-00
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KD2	£168-00
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CD1770	£208-00
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PC3030	£71-50
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sample, due to servo hunting on the tension rollers at this speed. Technics' claim for low scrape modulation was verified, the 10 kHz response showing clean sides descending quickly to low inherent noise levels.

Replay calibration accuracy was well within test-tape tolerance using Scotch 207 and Technics RT10B218 tape at 19 cm/sec, while overall frequency responses were uniform in the mid-band, with a mild LF irregularity below 200 Hz and some HF lift at the recommended settings for both types of tape. The latter was, however, small—a mere 1 dB at 38 cm/sec.

The 9.5 cm/sec response was inevitably curtailed, rolling off above 12 kHz. This simply reflects the fact that the deck was optimised for the higher speeds, since Technics' own Elcaset deck at the same speed offers a 25 kHz bandwidth. Driven to 0VU, the compression was negligible at 38 cm/sec, 20 kHz, but increased to 6 dB at 19 cm/sec, thereby suggesting use of a reduced record level for wide-band live program at this speed. It measured 6 dB down at 12 kHz on the slowest speed—not really a hi-fi performance.

The headroom in the record/replay electronics allowed full exploitation of modern and presumably future high performance tapes, running at the highest speed. Low noise and distortion levels were such that a dynamic range of 65 dB odd was available at 38 cm/sec, with channel balances generally within 0.5 dB. The meters, typical semi-VU types, required some care in judging levels, and the wind quality was satisfactory.

Other tapes were also tried with this deck,

with good results; but as with the Sony, the manufacturer's recommended settings did not coincide with those obtained under test. For example, Technics quote equalisation '2', bias '3' for Maxell UD50, this is fact giving a 4 dB lift at 20 kHz; we found equalisation '3' and bias '3' gave the required flat response.

Conclusions

It is obvious that all four machines performed very well and that in most cases the results were limited by the quality of the tape and not the electronics, which implies that with continuing tape improvements even better performances will be attained. In fact, mechanical qualities such as wow and flutter were undoubtedly to a professional standard.

With all the decks deserving a recommendation, the decision to purchase must be based on a dual consideration of price, plus facilities offered. At approximately £500 inclusive, the Sony 766 is undoubtedly good value. Points to note are low wow and flutter, fine performance at both speeds, facilities for FeCr tape plus NAB equalisation. The machine was also accurately calibrated in all respects and showed minimal response irregularities at low frequencies. However, some mechanical noise was apparent.

At a higher price (£600 approx.) the Revox B77 represents equally good value, with excellent responses, particularly at low frequencies. It is comparatively quiet, has low wow and also very little flutter. With IEC equalisation it offers the best dynamic range at 38 cm/sec, and the peak modulation indicators are also useful. The standard of

construction is high, with excellent accessibility for servicing.

The Technics RS1500 is estimated to sell for around £850. In addition to its excellent all-round performance, its outstanding transport offers a superlative tape-head contact, very low wow and flutter, including low scrape modulation, and gentle tape handling. A 9.5 cm/sec speed is included for less demanding applications, and as with the Sony, facility for $\frac{1}{4}$ -track replay is also included. NAB equalisation and a Varispeed capstan are standard, as is the quartz lock which makes a genuine elapsed-time tape meter possible, and the option for DC operation is also unique to the group.

In two-channel form, the Pioneer RT2022 costs approximately £900, with an extra £250 bringing in the second four-channel head-block and additional record amplifier control unit. As a system design it has no contemporary parallel and would suit a serious amateur music enthusiast, while the RTU11 on its own (c. £800) could be used alone as a replay/calibration transport with IEC and NAB equalisation at 38 cm/sec. In addition to the system's versatility and fine overall performance, special features include in-built calibration oscillators, wide-range metering and a rugged but basically straightforward mechanical construction. Mild LF response irregularities were present together with some low frequency flutter, but neither was judged to be serious. At approximately £1150 in 4-channel form, and taking into account all the facilities offered, the value is still good; but note the 50 Hz/100 Hz scrape flutter. ●

Readers' Problems Examined by Crossover

Noise Reduction Systems

Dear Sir, I have been trying to find out some details of the various noise reduction systems, past and present, and I particularly would like some information on the Dynaural Noise Suppressor. What do 'single-pass' and 'two-pass' systems mean?

P. H., Cardiff

The Dynaural Noise Suppressor was designed by H. H. Scott back in the late 40s, and controlled the bandwidth of the amplifier by means of separate high-frequency and low-frequency tone controls, which are automatically controlled by the signal. If your researches go deep enough, you will wish to know that a comparison of three versions of the dynamic noise suppressor (Scott, Goodell and Fisher) was published in the American magazine *Audio Engineering* by E. T. Canby, Sept. 1948 issue.

'Two-pass' systems use complementary encoding and decoding, and their aim is to reduce the effect of any noise introduced between the encoding and decoding device,

that is, the tape recorder; but, of course, they have no efficacy in removing noise already in the program before encoding. Examples of this technique are Dolby-B, dbx II, and JVC's ANRS and Super ANRS systems. Incidentally, tape recorded with Dolby-B can be replayed on the JVC system with acceptable results.

'Single-pass' noise reduction circuits operate on any signal and do not require pre-encoding, but rely to some degree on the 'masking' phenomenon (when two sounds of widely different levels are present simultaneously, the strong signal masks the weaker one), allied to the fact that the ear is most aware of relatively high frequency noise.

A typical example of this approach to noise reduction is the Burwen DNF 1201 unit. This dynamic noise-filter is a low-pass filter with an electronically controllable cut-off frequency. The attack and release times of the detector circuit are very important in determining how quietly this system works, and since the days of the Scott Dynaural Noise Suppressor, many design improvements have made the method more effective and less obtrusive. Another single-pass system is the Phase-Linear 1000.

These systems are aimed at reducing hissy noises, but record clicks and plops have been attacked by such devices as the SAE Model 5000 impulse noise reduction system. An even more recent device emanates from the Garrard research laboratory at Swindon, reviewed in the April issue.

Parametric Equalisers

Dear Sir, With the growing amount of technical jargon these days, I have found John Crabbe's 'Language of Hi-Fi' section in the 1978 *HFN/RR Annual* most useful. There are some terms missing, though, so please can you explain what 'parametric equalisers' are?

F. M. P., Taunton, Somerset

You will find that 'graphic equaliser' is defined, and the essential difference is that where graphic equalisers provide variable cut and boost at a number of fixed frequencies, the parametric device allows you to change frequency and contour. In other words, the frequency selection control is continuously variable over a wide band. Some of the latest graphic equalisers—or simply 'equalizers' if you prefer the American usage—offer a degree of parametric control, by having 'centre-frequency' or 'sharpness' controls for each slider, or the group as a whole.

This feature allows a degree of frequency enhancement that helps to remove undesired resonances, or add treble and bass without introducing boosts or cuts where the modifications are not wanted.

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Cassette Decks

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JLF45 Turntable .. C.A.H.

CD1740 Cass/Deck .. C.A.H.

KD21 Cass/Deck .. C.A.H.

CDS200 Cass/Deck .. C.A.H.

MF55 Music Centre .. C.A.H.

All other models on application

AIWA

TPR910 Rec/Cass .. C.A.H.

TPR940 Rec/Cass .. C.A.H.

AD1250 Cass/Deck .. C.A.H.

AD6300 Cass/Deck .. C.A.H.

AD6500 Cass/Deck .. C.A.H.

AD1800 Cass/Deck .. C.A.H.

AD1600 Cass/Deck .. C.A.H.

AX7500 Receiver .. C.A.H.

AF5050 Music Centre .. C.A.H.

AF5080 Music Centre .. C.A.H.

SONY

TA73 Amplifier .. £59-00

TA11 Amplifier .. £82-00

TA1630 Amplifier .. £82-00

TA2650 Amplifier .. £108-00

TA3650 Amplifier .. £150-00

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ST11 Tuner .. £82-00

ST2950F Tuner .. £86-00

ST3950 Tuner .. £129-00

ST5950 Tuner .. £221-00

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STR1800 Receiver .. £104-00

STR2800L Receiver .. £124-00

STR3800L Receiver .. £140-00

STR4800 Receiver .. £206-00

STR5800 Receiver .. £258-00

STR6800SD Receiver .. £306-00

PS11 Turntable .. £82-00

PS22 Turntable .. £94-00

PSX4 Turntable .. £117-00

PSX6 Turntable .. £143-00

PSX7 Turntable .. £163-00

TC118SD Cass./Deck .. 98-00

TC135SD Cass./Deck .. 98-00

TC158SD Cass./Deck .. 163-00

TC177 Cass./Deck .. £403-00

TC188 Cass/Deck .. £124-00

TC199 Cass/Deck .. £156-00

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KA7100 Amplifier .. C.A.H.
KA7300 Amplifier .. C.A.H.
KA8100 Amplifier .. C.A.H.
KT5300 Tuner .. C.A.H.
KT7500 Tuner .. C.A.H.
KT8300 Tuner .. C.A.H.
KR2600 Receiver .. C.A.H.
KR4070 Receiver .. C.A.H.
KR6600 Receiver .. C.A.H.
KX520 Cass./Deck .. C.A.H.
KX620 Cass/Deck .. C.A.H.
KD1033 Cass/Deck .. C.A.H.
KD2055 Cass./Deck .. C.A.H.
KD550 Cass/Deck .. C.A.H.

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SG1090 Music Centre C.A.H.
SG3060 Music Centre C.A.H.
SG2080 Music Centre C.A.H.
SG3090 Music Centre C.A.H.
SU2400 Amplifier .. C.A.H.
ST2400 Tuner .. C.A.H.
SG25Q Receiver .. C.A.H.
RE7860 Rec/Cass .. C.A.H.
SL18 Turntable .. C.A.H.
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SPEAKERS

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Celestion Ditton 44 .. £204-00
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KEF Calinda .. C.A.H.
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KEF Ref. 104 .. C.A.H.
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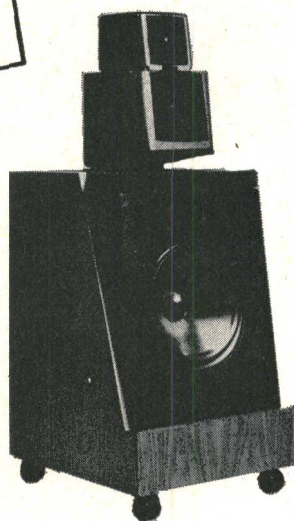
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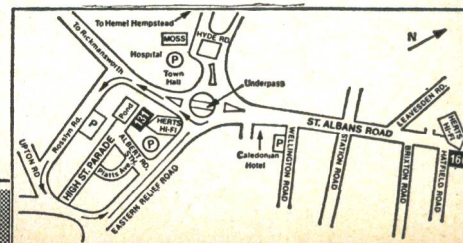
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Cambridge Audio P80 Silver/Black	£179-00
Harman Kardon A401 and A402	P.O.A.
Harrison S200	P.O.A.
JVC JAS11	£74-00
JVC JAS31	£110-00
Leak 3900A (Sp. off.)	£116-00
Marantz 1030	£79-90
National Panasonic SU2300 (Sp. off.)	£59-00
Pioneer SA5300 (Sp. off.)	£59-00
Pioneer SA5500 Mk 2	£65-00
Pioneer SA6500 Mk 2	£99-00
Pioneer SA7500 Mk 2	£142-00
Pioneer SA8500 Mk 2 (Sp. off.)	£190-00
Quad 303/33 (for Personal Callers)	£232-88
Quad 405/33 (for Personal Callers)	£291-38
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Rotel RA312 (Sp. off.)	£64-50
Rotel RA412 (Sp. off.)	£83-50
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Rotel RA313	£67-00
Rotel RA413	£94-00
Rotel RA713	£114-00
Rotel RA913	£161-00
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Sansui AU9900 (Sp. off.)	£340-00
Toshiba SB220 (Sp. off.)	£79-00
Toshiba SB420 (Sp. off.)	£129-50
Toshiba SB620	£215-50
Toshiba SB820	£305-50

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Aiwa AX7500	£190-00
Aiwa AX7600	£217-00
Akai AA1010 (Sp. off.)	£95-00
Akai AA1020 (Sp. off.)	£127-50
Akai AA1125	£126-50
Akai AA1135	£154-00
Akai AA1150	£212-00
Armstrong 625	£171-50
Armstrong 626	£198-00
Goodmans Module 150	£227-00
Goodmans Module 1-30	£165-00
Goodmans Module 90	£137-50
Harman Kardon HK430, HK730	P.O.A.
Hitachi SR302 (Sp. off.)	£97-50
Hitachi SR303L	£118-50
Hitachi SR502 (Sp. off.)	£119-00
JVC JRS100, 200L, 300, 400, 600	P.O.A.
Leak 3200 (Sp. off.)	£119-90
Leak 3400 (Sp. off.)	£144-90
Marantz 2215BL	£105-00
Marantz 2226B	£165-00
Philips AH762	£157-00
Philips RH743	£136-00
Pioneer SX450 (Sp. off.)	£139-00
Pioneer SX550 (Sp. off.)	£135-00
Pioneer SX650 (Sp. off.)	£192-00

Pioneer SX750 (Sp. off.)	£229-00
Pioneer SX850 (P.P.T.B.A.) (Sp. off.)	£310-00
Pioneer SX950 (P.P.T.B.A.) (Sp. off.)	£350-00
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Rotel RX102 Mk 2 (Sp. off.)	£75-00
Rotel RX202 Mk 2 (Sp. off.)	£99-00
Rotel RX7707 (Sp. off.)	£162-50
Rotel RX802 (Sp. off.)	£189-90
Rotel RX303	£99-50
Rotel RX403 (Sp. off.)	£113-00
Rotel RX503 (Sp. off.)	£142-00
Rotel RX603	£219-00
Rotel RX803	£263-00
Rotel RX1603 (Sp. off.)	£499-00
Sansui 331 (Sp. off.)	£95-00
Sansui 5050 (Sp. off.)	£158-00
Sansui 6060 (Sp. off.)	£190-00
Sansui 7070 (Sp. off.)	£270-00
Sansui 8080 (P.P.T.B.A.) (Sp. off.)	£311-00
Sansui 9090 (P.P.T.B.A.) (Sp. off.)	£344-00
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Toshiba SA220L (Sp. off.)	£86-00
Toshiba SA320L (Sp. off.)	£111-00
Toshiba SA420 (Sp. off.)	£150-00
Toshiba SA520	£215-50
Toshiba SA620 (Sp. off.)	£259-00

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Aiwa AF3090 Cassette Receiver	£335-00
Aiwa AF5050 with Speakers	£287-00
Aiwa AF5080	£329-00
Aiwa AF5090	£360-00
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Akai AC3800L (with Dolby) (Sp. off.)	£289-00
Garrard GA150 (Sp. off.)	£199-00
Garrard GA155	£263-00
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Goodmans MCD100 & RB35 (Sp. off.)	£390-00
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Hitachi SDT7620 (Sp. off.)	£165-00
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Hitachi SDT7675 with Dolby B	£319-00
Hitachi SDT7680R with Dolby B	£363-00
Hitachi SDT7785	£331-00
Hitachi SDT7710 (Sp. off.)	£187-00
JVC 1845 excluding speakers	£221-00
JVC MF45FL Dolby B	P.O.A.
JVC MF47 Dolby B	P.O.A.
National Panasonic SG1060L	£185-00
National Panasonic SG1090L	£240-00
National Panasonic SG2080LD	£360-00
National Panasonic SG2080L	£333-00
National Panasonic SG3060L	£297-00
National Panasonic SG3090	£378-00
National Panasonic SG2070	£270-00
Sharp SG220 and LS220	£186-50
Sharp SG400 (Dolby B) excl. Spkrs	£242-00
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Toshiba SM2700	£175-00
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Toshiba SM3600 with Dolby (Sp. off.)	£299-00
Toshiba SM3700 with Dolby (Sp. off.)	£340-00

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Goodmans RB65 (Sp. off.)	£125-00
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KEF Calinda	P.O.A.
KEF Chorale	P.O.A.
KEF Corelli	P.O.A.
KEF Reference 104	P.O.A.
KEF Reference 104AB	P.O.A.
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Mordaunt Short Carnival Festival, Pageant Series 2 Teak/Walnut	P.O.A.
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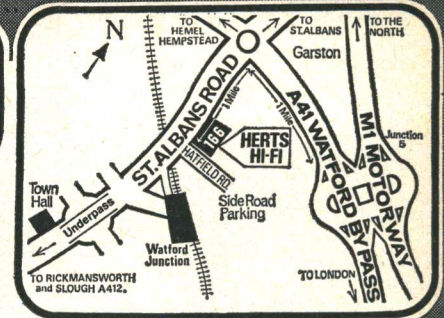
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Shure M75ED Type 2 Cartridge	
Pair Wharfedale Glendale 3XP Speakers	

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Ortofon FF15E Cartridge	
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Akai AA1020 Receiver	
Sansui SR222P Turntable	
Shure M75ED Cartridge	
Pair Wharfedale Linton 3XP Speakers	

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Sansui 5050 Receiver	
Sansui SR222P Turntable	
Shure M95ED Cartridge	
Pair Mordaunt Short Pageant 2 Speakers	

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Hitachi VFS260 Cartridge	
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Shure M75ED Cartridge	
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Pair Leak 3020 Speakers	

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Fons International Mk I	£79.95
Garrard SP25 Mod	
Plus Cart	£36.95
Garrard 86SB Mk II	
Mod plus Cart	£59.95
Golding CK2 Kit	
(Inc Arm)	£19.95
Golding G103	£29.95
Hitachi HT350	£76.95
Hitachi PS17 plus	
Cart	£69.95
Hitachi PS38 plus	
Cart	£84.95
Hitachi PS48	£104.95
JVC JLA15	£59.00
JVC JLF45	£123.50
Leak 3001	£87.95
Lenco L62	£39.95
Lenco L65	£39.95
Lenco L82	£44.95
Lenco L84	£49.95
Lenco L90	£79.95
Lenco Plinth/Cover	
for L65	£7.95
Micro Seiki MB10	£59.50

National Panasonic	
SL18	£52.95
Rotel RP2500	£119.95
Rotel RP3000 plus	
Arm	£92.95
Rotel RP3300	£65.95
Sansui SR222P	£54.95
Sansui SR525	£114.95
Sansui FR1080P	£69.95
Sony PS6750	£129.95
Sony PSX4	£112.95
Technics SL22	£54.95
Technics SL23	£64.95
Thorens TD160BC	£69.95
Toshiba SR220	£54.95
Toshiba SR255	£89.95
Trio KD1033	£49.95
Trio KD2044	£69.95

SPEAKERS

(C & I Bookshelf £3.50)
(C & I Console £5.00)

Special Offers	
Aiwa SC/25	£54.95
A.R. 14	£207.95
A.R. 16	£99.95
B & W DMSA	£209.95
B & W DMS	£105.95
Celestion Ditton 15	£89.95
Celestion Ditton 22	£124.95
Celestion UL6	£128.95
Goodmans Achromat	
250	£119.95
Goodmans Achromat	
100	£84.95
Goodmans Achromat	
400	£154.95
Goodmans Minster	£45.95
I.M.F. Compact II	£96.95
K.E.F. 103	£184.95
K.E.F. Choral	£90.95
K.E.F. Coda	£59.95
K.E.F. Kit I	£64.95
Leak 2075 (C & I-£12)	£299.95
Leak 3020	£79.95
Leak 3050	£174.95
Monitor Audio	
MA3 II	£349.95
Monitor Audio MA4	£190.95
Sansui ES200	£124.95
Tannoy HPD295A	£79.50
Tannoy HPD315A	£89.95
Tannoy Cheviot	£287.95
Videotone Saphir I	£49.95
Wharfedale Chevins	£29.95
Wharfedale Glendale	
3XP	£90.95
Yamaha NS500	£299.95

CASSETTE DECKS/ RECORDERS

Special Offers (C & I £2.75)

Aiwa AD1250	£131.95
Aiwa AD1600B	£194.95
Aiwa AD1800	£244.95
Aiwa AD6500	£169.95
Akai GXC310D	£139.95
Akai CS34D	£87.95
Akai CS702D	£97.95
Akai CS705D	£109.95
Akai GXCT10D	£159.95
Amstrad 7050	£69.95
Garrard GC350	£114.95
Hitachi D440	£79.95
Hitachi D3500	£179.95
Hitachi DS2330	£69.95
Hitachi D2360	£89.95
J.V.C. CDS200B	£164.95
J.V.C. CD1740	£79.95
J.V.C. CD1970	£190.95
Leak 3007	£119.95
Pioneer CTF6060	£129.95
Pioneer CTF4040	£114.95
Radionette RCD520	£67.95
Rotel RD12T	£139.95
Rotel RD20	£139.95
Sansui SC2000	£129.95
Sansui SC2002	£129.00
Sansui SC3000	£169.95
Sansui SC3003	£164.00
Sanyo 40559	£82.95
Sanyo RD4080	£89.95
Sanyo 4600G	£149.95
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Sharp RT2000	£69.95
Sony TC135SD	£89.95
Sony TC138SD	£159.95
Sony TC153SD	£154.95
Sony TC186SD	£114.95
Sony TC204SD	£119.95
Sony TC206SD	£139.95
Sony TC209SD	£189.95
Sony TC229SD	£224.95
Tandberg 3541X	£224.95
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Teac A150	£109.95
Teac A400	£159.95
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Teac A2300SD	£359.95
Teac A6100	£459.95
Technics RS615	£99.95
Toshiba PC3060	£99.95
Toshiba PC3110	£54.95
Toshiba PC4020	£89.95
Toshiba PC5060	£129.95
Trio KX620	£124.95
Trio KX720	£154.95
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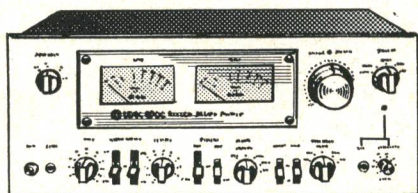
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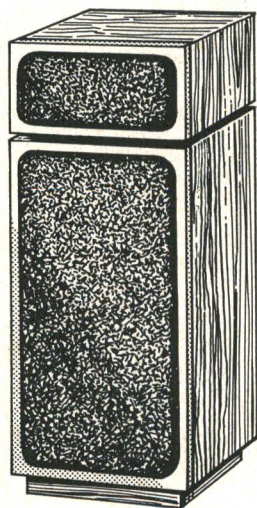
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Sanyo 2400 .. **£167.41**
Amstrad 5050 **£99.00**

AMPLIFIERS

Sanyo DCA1001 **£101.73**
Amstrad EX330 **£67.00**
Amstrad IC2000 **£45.00**

RECORD DECKS

JVC JL40 .. P.O.A.
JVC JL15 .. P.O.A.
Amstrad TP12D **£49.00**
Amstrad P182 **£34.52**

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JVC KD21 .. P.O.A.
JVC CD1770 .. P.O.A.
Sanyo RD5050G **£94.01**
Sanyo RD5300G **£121.04**
Amstrad 7070.. **£98.00**

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Sanyo 9980 .. **£127.48**

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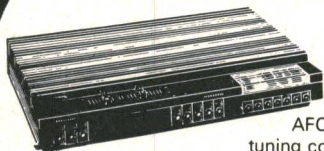
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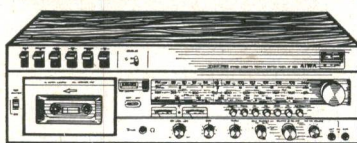
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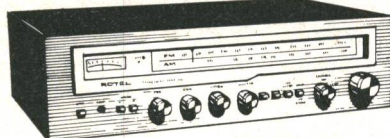


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cartridge



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Front loading
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Cassette Deck
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£94.90

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	REC. PRICE	OUR PRICE
AKAI AM 2200 2 x 20	124.70	88.90
AKAI AM 2400 2 x 40	182.00	127.90
AKAI AM 2600 2 x 60	255.45	179.90
AKAI AM 2800 2 x 80	322.65	199.90
ALBA UA 900 2 x 33	—	69.94
AMSTRAD EX 330 2 x 35	87.66	59.90
AMSTRAD 8000 Mk. III 2 x 10	42.86	24.90
AMSTRAD IC 2000 Mk. III 2 x 25	60.36	37.90
ARMSTRONG 621 2 x 40	136.00	104.90
GARRARD Music recovery module MRM101	112.44	79.90
MARANTZ 1030 2 x 15	106.50	67.90
MARANTZ 1040 2 x 20	127.00	79.90
MARANTZ 1060 2 x 30	149.00	109.90
MARANTZ 1070 2 x 35	188.00	119.90
MARANTZ 1090 2 x 45	205.00	154.90
PIONEER SA 5500 Mk. II 2 x 15	93.24	64.90
PIONEER SA 6500 Mk. II 2 x 30	145.09	101.90
PIONEER SA 7500 Mk. II 2 x 45	201.87	149.90
PIONEER SA 8500 Mk. II 2 x 60	292.08	209.90
PIONEER SA 9500 Mk. II 2 x 80	405.82	294.90
PIONEER SA 9900 2 x 110	539.80	289.94
ROTEL RA 313 2 x 25	98.31	69.90
ROTEL RA 413 2 x 35	138.03	95.90
ROTEL RA 713 2 x 45	167.33	116.90
ROTEL RA 913 2 x 60	236.34	139.90
SANSUI AU 2900 2 x 17	100.01	59.94
SANSUI AU 4900 2 x 35	173.38	99.94
SANYO DCA200 2 x 15	—	63.90
SANYO DCA1001 2 x 50	—	109.90
TRIO KA 3700 2 x 25	—	69.90
TRIO KA 5700 2 x 40	—	119.90
TRIO KA 5500 2 x 55	—	149.94
TRIO KA 7100 2 x 55	—	204.90
TRIO KA 7300 2 x 65	—	179.94
TRIO KA 8100 2 x 70	—	285.00
TRIO KA 9100 2 x 90	—	375.00
TRIO MOD. 600 2 x 130	—	574.90

TUNER/AMPLIFIERS

AIWA AX7400 2 x 25	207.90	169.90
AMSTRAD EX 333 2 x 30	138.80	97.90
ARMSTRONG 625 FM 2 x 40	215.00	164.90
ARMSTRONG 626 AM/FM 2 x 40	248.00	189.90
FERGUSON 3477 FM stereo pre-set tuning 2 x 17	—	48.90
GOODMANS Module 120 2 x 40	—	159.90
GOODMANS Module 150 2 x 70	—	219.90
MARANTZ 2215B 2 x 15	170.00	89.90
MARANTZ 2226B 2 x 26	228.50	169.90
MARANTZ 2238B 2 x 38	290.00	219.90
MARANTZ 2252B 2 x 52	395.00	296.90
PIONEER SX 450 2 x 15	150.12	109.90
PIONEER SX 550 2 x 20	199.37	138.90
PIONEER SX 650 2 x 35	291.59	189.90
PIONEER SX 750 2 x 50	347.00	249.90
PIONEER SX 850 2 x 65	462.70	334.90
PIONEER SX 950 2 x 85	531.24	359.90
ROTEL RX 303 2 x 20	146.53	99.90
ROTEL RX 403 2 x 25	173.96	114.90
ROTEL RX 503 2 x 35	230.67	139.90
ROTEL RX 603 2 x 45	321.42	194.90
ROTEL RX 803 2 x 70	385.72	229.90
SANYO JCX 2100K 2 x 15	—	99.90

Tuner/Amplifiers - continued

	REC. PRICE	OUR PRICE
SANYO JCX 2300K 2 x 30	—	139.90
SANYO JCX 2400K 2 x 55	—	179.90
TRIO KR 2090 2 x 16	—	99.90
TRIO KR 3090 2 x 26	—	139.90
TRIO KR 4070 2 x 40	—	188.90
TRIO KR 6600 2 x 60	—	239.94
TRIO KR 9600 2 x 160	—	499.90

CASSEIVERS

Tuner/Amplifier/Cassettes	REC. PRICE	OUR PRICE
AIWA AF3060 2 x 24 Dolby cassette	297.86	239.90
AKAI AC3500L 2 x 25 Dolby cassette	340.35	249.90
PHILIPS RH851 2 x 15 DNL cassette plus two speakers	—	129.90

TUNERS

AKAI AT 2200	124.70	88.90
AKAI AT 2400	181.10	127.90
AKAI AT 2600	241.90	164.90
AMSTRAD 3000 Mk. II	60.36	38.90
AMSTRAD EX303	79.87	56.90
ARMSTRONG 623 AM/FM	152.00	117.90
ARMSTRONG 624 FM	118.00	89.90
LEAK 3900T	306.30	169.94
MARANTZ 2100	160.00	114.90
MARANTZ 2120	225.00	179.90
PIONEER TX 5500 Mk. II	105.54	74.90
PIONEER TX 6500 Mk. II	151.64	105.90
PIONEER TX 8500 Mk. II	239.84	177.90
PIONEER TX 9500 Mk. II	329.43	244.90
ROTEL RT 425	111.56	78.90
ROTEL RT 725	138.03	97.90
ROTEL RT 925	238.23	164.90
SANYO FMT 200K	—	69.90
SANYO FMT 1001	—	79.90
TRIO KT 5500	—	79.90
TRIO KT 5300	—	139.94
TRIO KT 8300	—	299.90
TRIO MOD. 600T	—	494.00

TURNTABLES

AIWA AP2200 Direct drive auto return inc. cartridge	131.21	109.90
CONNOISSEUR B01 kit	—	16.50
CONNOISSEUR B02	—	35.90
GARRARD SP25 Mk. V belt drive with Shure M75/6/SM	—	59.85
GARRARD DD75 direct drive	133.31	74.90
GARRARD GT20 belt-drive Shure M75ED	92.13	59.90
GARRARD GT25 belt-drive auto stop M75ED	103.44	68.90
GARRARD GT35 servo belt-drive auto stop M75ED	123.69	79.90
MARANTZ 6100	106.50	49.90
MARANTZ 6150 direct drive	132.00	99.90
PHILIPS GA312 belt drive with GP401	—	69.90
PHILIPS GA437 belt drive with GP400	—	53.94
PIONEER PL112D	77.03	53.94
PIONEER PL510A direct drive	132.08	99.94
PIONEER PL530 direct drive	231.35	164.90
ROTEL RP 1300 belt drive	76.58	49.90
ROTEL RP 2300 belt drive auto arm return	87.83	59.94
ROTEL RP 3300 belt drive DC servo motor	97.57	68.90
ROTEL RP 5300 direct drive	125.46	84.90

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Turntables - continued

	REC. PRICE	OUR PRICE
SANSUI SR222 belt drive	83.25	46.94
SANSUI FR1080P belt drive auto return	116.53	57.94
SANSUI SR525 direct drive	188.40	104.94
SANYO TP 626 belt drive, auto arm return	—	59.90
SANYO TP 727 belt drive, auto arm return servo motor	—	74.90
SANYO TP 1020 direct drive, auto arm return	—	79.90
SANYO TP 1100/2 direct drive auto arm return	—	109.90
STRATHEARN STM4 direct drive with fitted Ortofon FF15E	—	69.90
STRATHEARN SMA2 direct drive with fitted Ortofon VMS 20E	—	159.90
THORENS TD110	145.13	109.90
TRIO KD 1033B belt drive	—	49.90
TRIO KD 2055 belt drive	—	89.90
TRIO KD 2070 direct drive	—	99.90
TRIO KD 500 less arm	—	185.00
TRIO KD 550	—	209.00

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AMSTRAD ACOUSTA 2500	57.48	40.90
AMSTRAD EX 300	87.67	62.90
ARMSTRONG 602 monitor	199.88	159.90
CELESTION Hadleigh	67.82	36.90
CELESTION Dittion 11	92.82	63.90
CELESTION Dittion 15 XR	135.42	92.90
CELESTION Dittion 22	185.63	128.90
CELESTION Dittion 33	240.84	167.90
CELESTION Dittion 44	284.63	194.90
CELESTION Dittion 25	329.02	224.94
CELESTION UL6	146.76	119.90
CELESTION UL8	180.95	154.90
CELESTION UL10	268.34	194.90
GOODMANS Achromat 100 Monitor	—	79.90
GOODMANS Achromat 250 Monitor	—	119.90
GOODMANS Achromat 400 Monitor	—	154.90
GOODMANS Mini 2	—	54.90
GOODMANS RB18	—	55.90
GOODMANS RB20	—	68.90
GOODMANS RB35	—	96.90
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JR. Super Woofer, each	185.63	159.90
LEAK 3030	185.11	119.90
MARANTZ 4G	89.00	64.90
MARANTZ 5G	132.00	99.90
MARANTZ HD44	122.00	99.90
PIONEER CS313A	81.63	53.90
SOLAVOX TK15	36.90	22.90
SOLAVOX PR25 2 way	61.79	39.90
SOLAVOX PR30 3 way	96.99	62.90
SOLAVOX PR40 3 way	131.34	79.90
TRIO LS202A	—	49.90
WHARFEDALE Chevin	45.77	32.90
WHARFEDALE Denton 2XP	68.45	45.90
WHARFEDALE Linton 3XP	99.27	66.90
WHARFEDALE Glendale 3XP	137.45	92.90
WHARFEDALE Teesdale SP2	188.15	133.90
WHARFEDALE Dovedale SP2	255.26	179.90
WHARFEDALE E50	280.89	249.90
WHARFEDALE E70	345.53	314.90

CASSETTE RECORDERS

	REC. PRICE	OUR PRICE
AIWA AD1250 Dolby	173.51	139.90
AIWA AD6300 Dolby	187.89	149.90
AKAI CS340 Dolby	127.60	89.90
AKAI CS7020 Dolby	149.36	97.90
AKAI CS7070 Dolby	207.90	129.90
AKAI GXC390 Dolby	201.20	94.90
AKAI GXC7090 Dolby	264.60	184.90
AKAI GXC7250 Dolby 3 head	302.40	219.90
AKAI GXC7300 Dolby auto reverse	340.25	239.90
AMSTRAD 7050 Dolby	111.04	64.50
AMSTRAD 7060 Dolby	126.62	84.50
GARRARD GC300 Dolby	157.44	77.94
GOODMANS SCD110 Dolby	—	94.90
MARANTZ 5010 Dolby	192.00	139.90
MARANTZ 5025 Dolby	276.00	199.90
PHILIPS N2511 Dolby DNL	—	89.90
PHILIPS N2415 recorder inc. two loudspeakers batt./mains	—	77.90
PIONEER CT 5151 Dolby	154.22	104.94
PIONEER CTF 4040 Dolby	176.42	119.90
PIONEER CTF 7070 Dolby	208.02	149.90
PIONEER CTF 8080 Dolby	260.72	189.90
PIONEER CTF 9191 Dolby	316.64	224.90
PIONEER CTF 1000 3 head Dolby	508.32	367.90
ROTEL RD10F Dolby	138.97	97.50
SANSUI SC3000/3003 Dolby	261.13	109.94
SANYO 4028 Dolby	—	78.90
SANYO RD5055 Dolby	—	99.90
SANYO RD5150 Dolby	—	109.90
SANYO RD5300 Dolby	—	119.90
SANYO RD5600 Dolby timer	—	184.90
TRIO KX 520 Dolby	—	119.90
TRIO KX 620 Dolby	—	129.90
TRIO KX 720 Dolby	—	139.94
TRIO KX 830 Dolby	—	175.00
TRIO KX 920 Dolby	—	149.94
TRIO KX 1030 Dolby 3 heads	—	247.00

TAPE RECORDERS

AKAI 4000 DS Mk. II	234.35	164.90
AKAI 4000 DB Dolby	302.40	214.90
PHILIPS N4504 4-track DNL	—	169.90
PHILIPS N4506 4-track DNL	—	259.90
PIONEER RT707 auto reverse	504.82	369.90

FOR DETAILS OF McONOMY'S
SUPER PRICES ON CUT PRICE
CASSETTES, CARTRIDGES,
HEADPHONES, PICK-UP ARMS
AND MICROPHONES,
SEE OVER PAGE...

PLEASE NOTE:

There are no longer Recommended Retail Prices on some brands of Hi-Fi equipment, consequently some Recommended Prices shown are prices recommended prior to the end of September 1976. These are left for your information to assist you in evaluating your purchase.

AMSTRAD EX330

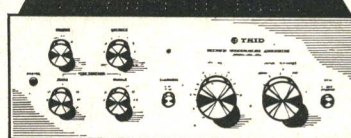
Stereo Amplifier

2 x 35 watts per channel RMS

Rec. Price £87.66

£59.90

TRIO KA3700



Stereo Amplifier 2 x 25 watts per channel RMS

£69.90

PIONEER CTF 4040

Front loading
Dolby Stereo
Cassette Deck
with Auto
stop.



Rec. Price £176.42

£119.90

MARANTZ 2215B



AM/FM
Stereo
Receiver.
15 watts RMS
per channel
output.

Rec. Price £170.00

£89.90

MARANTZ 6100

Belt-drive Turntable with
auto return 'S' shaped arm

Rec. Price £106.50

£49.90



6/78

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CLEVEDON	4-9 Kimberley Road, (off Strode Road), Clevedon	Tel: 0272 876041
EDINBURGH	Annandale St. Lane, Edinburgh	Tel: 031-557 1004
GLASGOW	Anderston Cross Centre, Argyle Street, Glasgow	Tel: 041-204 2355
HULL	Status City, Clough Road, Hull	Tel: 0482 442134
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For details of Mail Order see overleaf



Mcconomy hi-fi



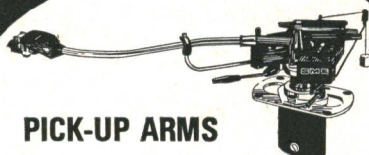
HEADPHONES

	REC. PRICE	OUR PRICE
Akai ASE7	15.00	8.90
Amstrad HPS6A	16.56	10.50
Goodmans OHP10	—	17.50
Koss Pro-4AA	43.87	22.90
Koss K6	17.66	11.90
Koss K6/LC	20.92	14.90
Pioneer SE205	13.64	9.90
Pioneer SE305	21.31	15.90

CARTRIDGES



ADCLM 34 Mk. 3	19.13	10.90
Audio Technica AT11EP	10.62	6.90
Audio Technica AT13EA	19.63	12.90
Goldring G800	8.44	4.25
Ortofon FF15E Mk. 2	17.00	13.90
Shure M55E	13.37	7.75
Shure M75EJ	20.96	11.90
Shure M75ED	23.99	13.90
Shure M95EJ	22.18	12.90
Shure M95ED	32.20	18.90
Shure V15 Mk. 3	66.52	39.90
Stanton 500A	18.68	11.90
Stanton 500EE	26.16	16.90



PICK-UP ARMS

ADCLMF1 Arm	111.38	63.90
Connoisseur SAU2	20.84	14.75
SME 3009 SER.II fixed headshell	67.16	44.90
SME 3009 SER.III	128.08	89.90
SME CA1 Carry Arm	18.56	12.90
SME S2 Head Shell	5.40	3.75
SME FD200 Damper	22.28	15.90



MICROPHONES

Akai ADM20	9.55	5.50
Amstrad DM 701 Pack	18.99	12.50
Eagle UD50 HL	14.79	9.90

CUT PRICE CASSETTES

	OUR PRICE		OUR PRICE
SCOTCH HIGH ENERGY		MAXELL	
C60	0.75	SLN C60	0.59
C90	0.99	SLN C90	0.75
C90 5 pack with free head cleaner	4.95	SLN C120	0.95
TDK		UD C60	1.09
DC60	0.60	UD C90	1.20
DC90	0.80	UD C120	1.60
DC120	1.10	UDXL1 C60	1.29
ADC60	0.85	UDXL1 C90	1.60
ADC90	1.10	UDXL2 C60	1.40
ADC120	1.59	UDXL2 C90	1.75
SAC60	1.10	BASF LH	
SAC90	1.49	C60	0.55
		C90	0.77
		C120	1.06

MEMOREX MRX02	
C60	0.72
C90	1.02
C120	1.37

MEMOREX CHROME	
C60	1.00
C90	1.45

VIDEO CASSETTES

SCOTCH

VC60-£13.50

PHILIPS

LVC150-£13.50

(2½ hours)



Now you can afford to buy the best quality tapes for your cassette deck. The very best... for a price you'd normally pay for tapes that are not in the same Hi-Fi class. You've checked our prices so if there isn't a Mcconomy branch near you, we'll mail your order to you FREE, irrespective of quantity.

With top brand names at these prices, can you afford *not* to buy the best?

Send your order or 'phone Leicester Mail Order Department 0533 536741 and quote your Access or Barclay Card number.

Mcconomy mail order

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List your requirements, and enclose cheque or postal order (including the appropriate delivery charges) made payable to 'Mcconomy'. ACCESS or BARCLAYCARD holders can purchase by including their card number and marking the order 'ACCESS/BARCLAYCARD'.

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Rutland Centre, Yeoman Street,
Leicester L11

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Here are 12 helpful and professional KEF dealers where you can go and hear the high quality range of KEF loudspeakers.

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<div>Edinburgh</div> <div>The Gramophone Television & Wireless Co. Pedestrian Precinct, Rose Street, Edinburgh. Tel: 031-225 9535</div> <div>KEF The Speaker Engineers</div>	<div>Edinburgh</div> <div>Hi-Fi Corner (Edinburgh) Ltd. 1 Haddington Place, Edinburgh EH7 4AE. Tel: 031-556 7901</div> <div>KEF The Speaker Engineers</div>	<div>Aberdeen</div> <div>Holburn Hi-Fi 445 Holburn Street, Aberdeen. Tel: 0224 25713</div> <div>KEF The Speaker Engineers</div>
<div>Dumfries</div> <div>Jardine & Malcolm 76 English Street, Dumfries. Tel: Dumfries 4117</div> <div>KEF The Speaker Engineers</div>	<div>Liverpool</div> <div>Hardman Radio, 33 Dale Street, Liverpool L2 2HF. Tel: 051-236 2828 & 1-4 Guildhall Arcade, Preston, Lancs PR1 1HR. Tel: 0772 59264 & The Forum, Northgate Street, Chester CH1 2BZ. Tel: 0244 31766 & 12/14 St. Marys Gate Market Street, Manchester M1 1PX. Tel: 061-832 6087</div> <div>KEF The Speaker Engineers</div>	<div>Sunderland</div> <div>Saxons 20-22 Waterloo Place Sunderland, Tyne & Wear.</div> <div>KEF The Speaker Engineers</div>
<div>York</div> <div>Multi Sound Hi-Fi Ltd. Davygate Arcade, York YO1 2SU. Tel: York (0904) 51712</div> <div>KEF The Speaker Engineers</div>	<div>Manchester</div> <div>Shannons Radio 25/29 Station Road, Urmston, Manchester M31 1DU. Tel: 061-748 2339</div> <div>KEF The Speaker Engineers</div>	
<div>Wilmslow</div> <div>Swift of Wilmslow 5 Swan Street, Wilmslow, Cheshire SK9 1HF. Tel: Wilmslow 26213</div> <div>KEF The Speaker Engineers</div>	<div>Newcastle on Tyne</div> <div>Hi-Fi Opportunities Ltd. 33 Handyside Arcade, Off Perry Street, Newcastle on Tyne NE1 4PZ. Tel: 0632 27791</div> <div>KEF The Speaker Engineers</div>	<div>Doncaster</div> <div>Kenneth Whitehead 9 Hallgate, Doncaster, S. Yorks DN1 3LU. Tel: Doncaster 61065</div> <div>KEF The Speaker Engineers</div>



KEF
The Speaker Engineers

KEF Electronics Ltd., Tovil, Maidstone, Kent ME15 6QP. Tel: Maidstone (0622) 672261.



SONY TC 204 SD

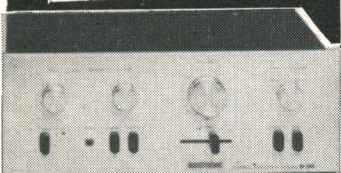
Outstanding Sony front loading cassette deck with Dolby noise reduction. Peak level indicator for accurate recording. Separate bias and EQ for correct tape matching. switchable multiplex filter to prevent FM interference when recording. Accepts normal *CRO2/FECR tape.

£129.95

SONY TC206SD

Front loading deck with led peak indicator, DC servo controlled motor, normal/chrome/ferrochrome Eq.

£149.95



AUDIOTRONIC LA 1010

Audiotronic LA1010 Stereo amplifier, with professional rack handle styling. 10 watts rms per channel power. Matches with the Audiotronic LT1010.

£47.50

LT1010 TUNER £49.95



MICRO SEIKI MB-10 TURNTABLE

A belt drive Turntable including magnetic cartridge includes detachable head shell, anti-skate control. Comes complete with dust cover and plinth.

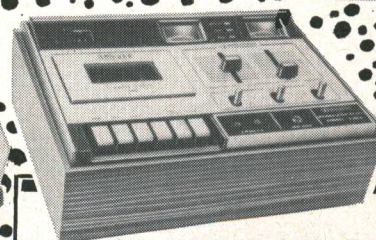
£49.95



SONY PS 6750 RECORD DECK

A new semi-automatic direct drive turntable that features anti-skate, cueing device, stroboscope, 'S' shaped carbon fibre tone arm and fluid filled platter. MAT. Comes complete with dust cover and plinth. Price does not include cartridge.

£129.95



AMSTRAD 7000

SUPERB AMSTRAD VALUE!

Full Dolby noise reduction. Signal to noise ratio. 55 dB (Dolby on). Variable output level to enable accurate amplifier matching. Independent recording level controls. 3 digit tape counter. CRO2/normal tape switching.

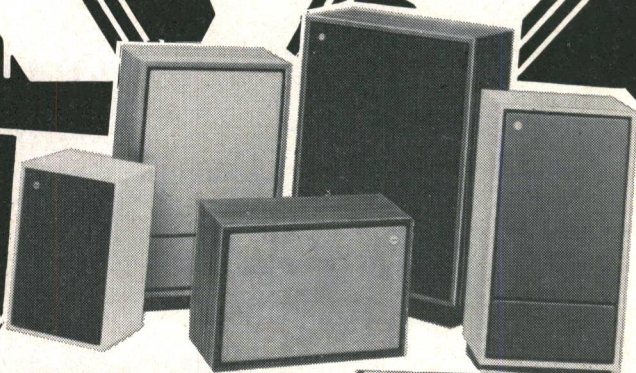
£59.95

TANNOY SPECIAL OFFERS

The unique Tannoy sound at very special prices! Featuring the famous dual concentric HPD driver. From the compact bookshelf Eaton to the floorstanding Arden studio monitor. High power handling and high efficiency at even greater than usual value. Special prices on drive units too

ARDEN £434.95 PR.
BERKELEY £382.50 PR.
CHEVIOT £299.90 PR.
DEVON £277.50 PR.
EATON £242.50 PR.

**SPECIAL
OFFER!**

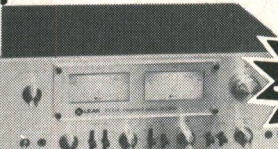


LEAK

LEAK 3001 RECORD DECK

A belt drive turntable that includes D.C. servo motor, stroboscope, bias compensator, 'S' shaped arm, cue control. Complete with dust cover and plinth. Price does not include cartridge.

£69.95



LEAK 3900A STEREO AMPLIFIER

A high powered stereo amplifier rated at 80+80 WRMS includes feature as twin power meters, click stop volume, three position filter, tape and monitoring facilities, loudness control. Finished in brushed aluminium and metal cabinet.

£149.95



LEAK 3900T AM/FM STEREO TUNER

Stereo AM/FM stereo tuner matches the 3900A and has features Multipath meter, signal and tuning meters. Hi-blend switch and three position muting switch. Finished in brushed aluminium.

£149.95

LEAK 3007 DOLBY CASSETTE DECK

A competitively priced front loading Dolby cassette deck with Auto stop, twin VU meters, tape counter, switchable EQ and memory rewind. Finished in brushed aluminium.

£89.95

AKAI AA1020 AM/FM STEREO RECEIVER

A well designed AM/FM stereo receiver rated at 20+20 WRMS includes tuning strength meter, A+7 speaker switching, FM muting, loudness control and tape switching. Finished in brushed aluminium and wood sleeve.

£104.95



MARANTZ 4G SPEAKER

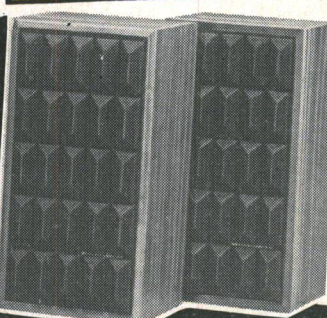
Bookshelf speaker system including 8" bass unit and 1 1/2" tweeter frequency response 40-18 KHz. Power handling 40 watts, nominal impedance 8 ohms (19 1/2" x 11 1/2" x 8 1/2").

£65.90 pr

MARANTZ 5G SPEAKER (Not illus.)

Larger two-way bookshelf system, 8" bass unit, 1 1/2" tweeter, frequency response 35-20 KHz. Three-position high frequency level, selector switch, power handling 50 watts, nominal impedance 8 ohms (23" x 12" x 9 1/2").

£98.90 pr





The Hi-Fi people

HI-FI RACK SYSTEMS

AKAI SYSTEM 1

1 x CS702D Cassette Deck
1 x AM2200 Stereo Amplifier
1 x AT2200 Stereo Tuner
1 x AP100 Turntable including cartridge
2 x SW137 Speakers
1 x RV100 Rack supplied at no extra cost



£449.90

TECHNICS SYSTEM 1

SL22 Record Deck,
RS630TUS Cassette Deck

ST7300 Stereo Tuner
SU7300 Stereo Amplifier

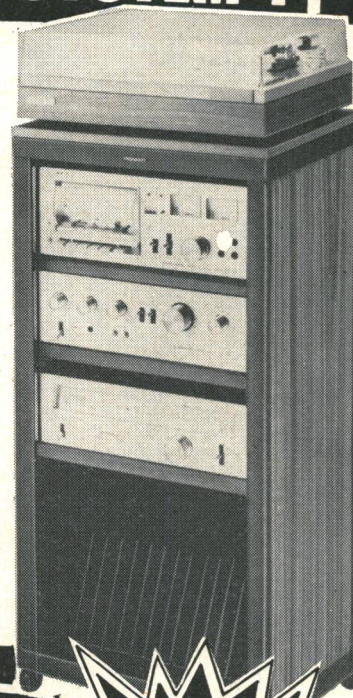
SB102 Loudspeakers
1 component rack included at no extra cost.

£499.95

PIONEER SYSTEM 1

Selected matching system designed for perfect compatibility, includes PL510A turntable, CTF4040 front loading cassette deck, SA7500 II amplifier, TX6500 II tuner. System includes rack in walnut finish, vinyl and black at no extra cost (Audio Technica ATT11EP cartridge supplied with turntable).

£482.50



JVC SYSTEM 1

1 x JLA40 Turntable
1 x JAS11 Stereo Amplifier
1 x JTV11 Stereo Tuner
1 x KD35 Stereo Cassette Deck
2 x SK44 Speakers
1 x LK31/MK31 Rack supplied at no extra cost

£492.50



JVC SYSTEM 2

1 x JRS100 II Receiver
1 x JLA40 Turntable
1 x Z1S Cartridge
+ SK33 Speakers.
1 x LK10 Component rack included at no extra cost.

£269.90

INSTANT CREDIT!
TERMS MAY BE AVAILABLE.
FULL DETAILS ON REQUEST

TRIO KA 1500 AMPLIFIER

25 + 25W per channel rms. Features a loudness control and headphone socket.
KA 3500 40W per channel rms **£99.95**
KA 5500 55W per channel rms **£149.95**
KA 7300 65W per channel rms **£199.95**

£69.95

Manual
version
ATT 100M
£49.95

AUDIOTRONIC ATT100S

Precision engineered semi-automatic belt drive turntable. Unique mat design for optimum record support. Sensitive statically balanced "S-Shaped" pick-up arm for accurate tracking. Thread and weight bias system friction hinged lid. Only Audiotronic could offer you this kind of value!

£57.50

WHARFEDALE GLENDALE 3XP

Utilising the same mid-range and treble units is the Linton 3XP with a larger 250mm bass driver for bigger power handling (40 watts RMS) and punchier bass - phase corrected mid-range unit. "Transmission line" loaded for low colouration.

£89.90 pr

DENTON 2XP **£44.50 pr**
LINTON 3XP **£64.50 pr**

ASK ABOUT
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BUDGET ACCOUNT
SCHEME

AKAI

CS702D DOLBY CASSETTE DECK

AKAI value + featured signal to noise ratio better than 60 dB (Dolby on), wow + flutter less than .08% and limiter to prevent over recording. Separate bias and EQ switching. DC motor for minimum motor noise.

£99.95

AIWA AD 6300 DOLBY CASSETTE DECK

A fully automatic front loading Dolby cassette deck includes as twin VU meters fast forward/Cue facilities, tape counter, tape switching. Finished in brushed aluminium and black metal case.

£144.95

SONY

STR 7015 AM/FM STEREO RECEIVER

A high quality AM/FM Stereo Receiver rated at 15+15 WRMS with signal strength meter, A+B speaker switching, tape switching and loudness control. Finished in brushed aluminium and wood sleeve.

£89.95

AUDIOTRONIC MODEL II LOUDSPEAKER

Brand new addition to the Audiotronic range made exclusively for Laskys in England. Designed by one of the leading U.K. loudspeaker designers. 3 drive unit constant resistance crossover. Suitable for amplifiers 10-50 watts RMS power. Acoustic suspension loading. Smooth frequency response and exceptional clarity. Sculptured foam grille. Compact bookshelf size.

£59.95 pr

GOODMANS ACHROMAT 100 LOUDSPEAKERS

A two way loudspeaker system rated at 25-50 Watts RMS finished in teak veneer and matching brown grille cloth. Size 350 x 233 x 212 mm.

£72.50 pr

ACHROMAT 250 **£99.95 pr** ACHROMAT 400 **£149.95 pr**

RB18 LOUDSPEAKERS

Handling capacity 10-40 watts rms with 200mm long throw base unit, 26mm high frequency dome radiator for clean transient response, and five element crossover network. Size 430mm x 260mm x 250mm

£54.90 pr

RB20 **£68.90 pr** RB35 **£98.90 pr**

EXTRA TRIO VALUE

TRIO KR 2600 STEREO RECEIVER

15 watts rms per channel with VHF stereo and medium wave.

£92.50

SANYO

SANYO RD 5055G DOLBY CASSETTE DECK

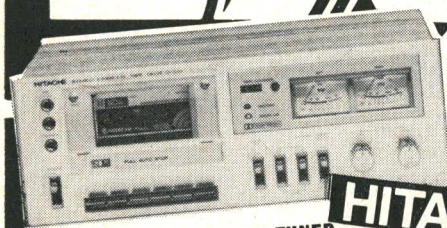
This new front loading Dolby cassette deck includes features as twin VU meters, tape switching, oil counter. Finished in brushed aluminium and black metal case.

£99.95

SANYO TP 1020 RECORD DECK

A new direct drive semi Auto 2-speed record deck includes cueing, anti skate, bias control, stroboscope and "S" shaped arm. Comes complete with plinth and cover. Price does not include cartridge.

£79.95



HITACHI FT340 STEREO TUNER

Sensitive AM/FM stereo tuner phase lock loop IC in MPX section for superior separation. Lywheel tuning, MPX noise filter muting switch, stereo/mono switch, large signal strength and centre tuning meter.

£84.95

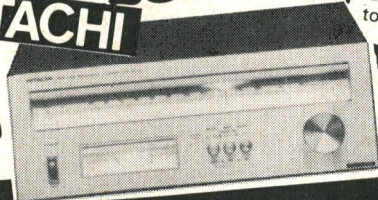
HA250 AMPLIFIER £74.95

HITACHI D220 STEREO CASSETTE DECK

Front loading stereo cassette deck with Dolby separate bias and EQ switching DC servo motor signal to noise ratio better than 60 dB.

£84.95

HITACHI



AKAI CS707D

Front loader from one of the Cassette Deck Leaders. Separate record level and output level controls. Peak level indicator for maximum use of dynamic range. Multiplex filter for FM recording limiter to prevent over-recording.

£119.95



GARRARD 125SB

Newcomer to the famous Garrard range belt drive turntable with low mass "S"-shaped arm to minimize tracking error. Deep aluminium platter for low vibration. Slide-in cartridge carrier. Viscous damped cueing. Fully automatic single play operation.

£39.95

86SB MARK II

Tab switch operation. Low mass "S"-shaped arm. Dynamically balanced platter, belt drive.

£47.50

ALL WITH SHURE MAGNETIC CARTRIDGE



AUDIOTRONIC ACD1000

Front loading Dolby cassette deck from the Audiotronic stable. Convenient sloping front panel. Separate bias and EQ switching for optimum tape selection. Air damped cassette eject mechanism. Removable head cover for easy cleaning. Direct function piano key operation.

£79.95



AIWA AD1250

Dolby cassette deck, unique sloping styling for ease of use, frequency response 30-16 KHz (CRO2), led peak indicators.

£134.95



AKAI AA1030

30 watts per channel RMS, AM/FM centre tuning and signal strength meters, facility for 2 sets of speakers twin tape monitors, variable FM mute level.

£139.95



SONY ST2950F STEREO TUNER

Sensitive 4 band tuner FM/MW/LW and Short Wave centre tuning and separate signal strength meter, hi-blend switch, built-in AM antenna.

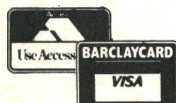
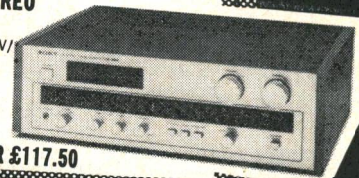
£78.50

SONY STR 2800L STEREO RECEIVER

20 watts RMS per channel, FM/MW/LW, PLL IC, signal strength and separate centre tuning meter.

£112.50

SONY ST 3950 STEREO TUNER £117.50



LASKYS



Prices were correct at time of going to press E & O E. Prices include VAT. Full 12 months Guarantee

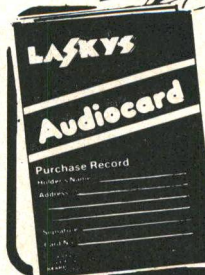
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HEAD OFFICE: AUDIOTRONIC HOUSE, THE HYDE, HENDON NW9 6JJ. TEL: 01-200 0444

MAIL ORDERS: TO LASKYS, BRENT CROSS SHOPPING CENTRE, HENDON WAY, NW4 3FB. TEL: 01-202 0977 PLEASE ADD £2.50 PACKING AND DELIVERY FOR EACH PARCEL.



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Rec.
Retail Price
Inc. VAT

Comet
Price
Inc. VAT

STEREO AMPLIFIERS

AKAI		
AM 2200 2 x 20	124.70	88.90
AM 2400 2 x 40	182.00	127.90
AM 2600 2 x 60	255.45	179.90
AM 2800 2 x 80	322.65	199.90

ALBA		
UA 900 2 x 33	—	69.94

AMSTRAD		
EX 330 2 x 35	87.66	61.90
8000 Mk. 3 2 x 10	42.86	24.90
IC 2000-Mk. 3 2 x 25	60.36	37.90

ARMSTRONG		
621 2 x 40	136.00	106.90

GARRARD Music recovery module		
MRM 101	112.44	79.90

MARANTZ		
1030 2 x 15	106.50	67.90
1040 2 x 20	127.00	79.90
1060 2 x 30	149.00	109.90
1070 2 x 35	188.00	119.90
1090 2 x 45	205.00	154.90

PIONEER		
SA 5500 Mk. II 2 x 15	93.24	65.90
SA 6500 Mk. II 2 x 30	145.09	102.90
SA 7500 Mk. II 2 x 45	201.87	149.90
SA 8500 Mk. II 2 x 60	292.08	209.90
SA 9500 Mk. II 2 x 80	405.82	294.90
SA 9900 2 x 110	539.80	289.94

ROTEL		
RA 313 2 x 25	98.31	69.50
RA 413 2 x 35	138.03	95.90
RA 713 2 x 45	167.33	114.90
RA 913 2 x 60	236.34	149.90

SANSUI		
AU 2900 2 x 17	100.01	59.94
AU 4900 2 x 35	173.38	99.94

SANYO		
DCA200 2 x 15	—	63.90
DCA1001 2 x 50	—	109.90

TRIO		
KA 3700 2 x 25	—	69.90
KA 5700 2 x 40	—	119.90
KA 5500 2 x 55	—	149.94
KA 7100 2 x 55	—	204.90
KA 7300 2 x 65	—	179.94
KA 8100 2 x 70	—	285.00
KA 9100 2 x 90	—	375.00
MOD. 600 2 x 130	—	574.90

TUNERS

AKAI		
AT 2200	124.70	88.90
AT 2400	181.10	127.90
AT 2600	241.90	169.90

AMSTRAD		
3000 Mk. 2	60.36	38.90
EX303	79.87	56.90

ARMSTRONG		
623 AM/FM	152.00	117.90
624 FM	118.00	89.90

LEAK		
3900T	306.30	169.94

MARANTZ		
2100	160.00	114.90
2120	225.00	179.90

PIONEER		
TX 5500 Mk. II	105.54	73.90
TX 6500 Mk. II	151.64	105.90
TX 8500 Mk. II	239.84	177.90
TX 9500 Mk. II	329.43	244.90

Check our prices by phone. They may be even cheaper!

All the prices in this advertisement were prepared approximately 6 weeks ago to meet the necessary publication date. This means that owing to our policy of giving the best possible value for money, some of our prices may be even lower! So please phone your nearest Comet warehouse or shop to check the latest price. You may find that Comet are giving you an even better bargain than before!

Rec.
Retail Price
Inc. VAT

Comet
Price
Inc. VAT

Tuners — continued

ROTEL		
RT 425	111.56	77.90
RT 725	138.03	97.90
RT 925	238.23	161.90
RT 1024 Dolby	434.87	249.90

SANYO		
FMT 200K	—	69.90
FMT 1001	—	79.90

TRIO		
KT 5500	—	79.90
KT 7300	—	139.94
KT 7500	—	209.00
KT 8300	—	299.90
MOD. 600T	—	494.00

CASSEIERS

TUNER/AMPLIFIER/CASSETTES

AIWA		
AF3060 2 x 24 Dolby cassette	297.86	239.90
AF3090 2 x 40 Dolby cassette	459.86	389.90

AKAI		
AC3500L 2 x 25 Dolby cassette	340.35	249.90

PHILIPS		
RH 851 2 x 15 DNL cassette plus two speakers	—	129.90

TUNER/AMPLIFIERS

AIWA		
AX7400 2 x 25	207.90	169.90
AX7600 2 x 40	277.12	229.90

AMSTRAD		
EX333 2 x 30	138.80	97.90

ARMSTRONG		
625 FM 2 x 40	215.00	159.90
626 AM/FM 2 x 40	248.00	189.90

FERGUSON		
3477 FM stereo pre-set tuning 2 x 17	—	48.90

GOODMANS		
Module 120 2 x 40	—	159.90
Module 150 2 x 70	—	219.90

MARANTZ		
2215B 2 x 15	170.00	89.90
2226B 2 x 26	228.50	169.90
2238B 2 x 38	290.00	219.90
2252B 2 x 52	395.00	296.90

Rec.
Retail Price
Inc. VAT

Comet
Price
Inc. VAT

Tuner/Amplifiers — continued

PIONEER		
SX 450 2 x 15	150.12	109.90
SX 550 2 x 20	199.37	139.90
SX 650 2 x 35	291.59	189.90
SX 750 2 x 50	347.00	249.90
SX 850 2 x 65	462.70	334.90
SX 950 2 x 85	531.24	359.90

ROTEL		
RX 303 2 x 20	146.53	98.90
RX 403 2 x 25	173.96	114.45
RX 503 2 x 35	230.67	139.90
RX 603 2 x 45	321.42	199.90
RX 803 2 x 70	385.72	229.90

SANYO		
JCX 2100K 2 x 15	—	99.90
JCX 2300K 2 x 30	—	139.90
JCX 2400K 2 x 55	—	179.90

TRIO		
KR 2090 2 x 16	—	99.90
KR 3090 2 x 26	—	139.90
KR 4070 2 x 40	—	188.90
KR 6600 2 x 60	—	239.94
KR 9600 2 x 160	—	499.90

TURNTABLES

AIWA		
AP2200 direct drive auto return inc. cartridge	131.21	109.90
AP2500 direct drive auto stop and lift	209.94	169.90

CONNOISSEUR		
BD1 kit	—	16.50
BD2	—	35.90

GARRARD		
SP25 Mk. 5 belt drive with Shure M75/6/SM	59.85	38.90
DD75 direct drive	133.31	74.90

GT20 belt-drive Shure M75ED	92.13	62.90
GT25 belt-drive auto stop M75ED	103.44	69.90
GT35 servo belt-drive auto stop M75ED	123.69	84.90

MARANTZ		
6100	106.50	49.90
6150 direct drive	132.00	99.90

PHILIPS		
GA312 belt drive with GP401	—	69.90
GA437 belt drive with GP400	—	52.90

Rec.
Retail Price
Inc. VAT

Comet
Price
Inc. VAT

Turntables — continued

PIONEER		
PL112D	77.03	53.94
PL510A direct drive	132.08	99.94
PL530 direct drive	231.35	164.90
PL550 direct drive	274.55	199.90
PLC590 direct drive less arm	361.20	269.90

ROTEL		
RP 1300 belt drive	76.58	49.90
RP 2300 belt drive auto arm return	87.83	59.94
RP3300 belt drive DC servo motor	97.57	68.90
RP5300 direct drive	125.46	84.90

SANSUI		
SR222 belt drive	83.25	46.94
FR1080P belt drive auto return	116.53	57.94
SR525 direct drive	188.40	104.94

SANYO		
TP 626 belt drive, auto arm return	—	59.90
TP 727 belt drive, auto arm return servo motor	—	74.90
TP 1020 direct drive, auto arm return	—	79.90
TP 1100/2 direct drive auto arm return	—	109.90

STRATHEARN		
STM4 direct drive with fitted Ortofon FF15E.	—	69.90
SMA2 direct drive with fitted Ortofon VMS 20E	—	159.90

THORENS		
TD145 Mk. 2 C auto lift	156.38	99.94
TD160 Mk. 2 BC less arm	105.75	82.90
TD110	145.13	109.90
TD166 Mk. 2	100.12	76.90

TRIO		
KD 1033B belt drive	—	49.90
KD 2055 belt drive	—	89.90
KD 2070 direct drive	—	99.90
KD 500 less arm	—	185.00
KD 550	—	209.00

SPEAKERS

ALL SPEAKERS ARE PRICED AS PAIRS

AMSTRAD		
ACOUSTA 1000	26.30	19.90
ACOUSTA 2500	57.48	40.90
EX 300	87.67	62.90

ARMSTRONG		
602 monitor	199.88	159.90

CELESTION		
Hadleigh	67.82	36.90
Ditton 11	92.82	64.90
Ditton 15 XR	135.42	93.90
Ditton 22	185.63	128.90
Ditton 33	240.84	167.90
Ditton 44	284.63	194.90
Ditton 25	329.02	224.94
UL6	146.76	119.90
UL8	180.95	154.90
UL10	268.34	199.90

GOODMANS		
Achromat 100 Monitor	—	79.90
Achromat 250 Monitor	—	119.90
Achromat 400 Monitor	—	154.90
Mini 2	—	54.90
RB18	—	55.90
RB20	—	69.90
RB35	—	96.90
RB65	—	124.90

I promise you 12 months service, including parts and labour on all goods – without charge. After the initial free 12 month period you can still rely on us to keep your purchases in working order.

Michael Hollingbery
Chairman

	Rec. Retail Price	Comet Price
	Inc. VAT	Inc. VAT

Speakers — continued

JR		
149	151.88	124.90
Super Woofer each	185.63	159.90
LEAK		
3030	185.11	119.90

MARANTZ

4G	89.00	64.90
5G	132.00	99.90
HD44	122.00	99.90

PIONEER

CS313A	81.63	53.90
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SOLAVOX

TK15	36.90	22.90
PR25 2 way	61.79	41.90
PR30 3 way	96.99	63.90
PR40 3 way	131.34	79.90

TRIO

LS202A	—	49.90
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WHARFEDALE

Chevin	45.77	32.50
Denton 2XP	68.45	44.45
Linton 3XP	99.27	64.45
Glendale 3XP	137.45	89.50
Teesdale SP2	188.15	133.90
Dovedale SP2	255.26	179.90
E50	280.89	249.90
E70	345.53	314.90

SPEAKER KITS

WHARFEDALE

Denton kit (pair)	39.15	27.90
Linton 3 kit (pair)	60.71	42.90
Glendale 3XP kit (pair)	82.44	58.90

CARTRIDGES

All cartridges marked * are suitable for CD4 and normal stereo records.

ADC

ZLM Mk. 3	103.50	69.90
XLN Mk. 3	66.32	39.90
VLM Mk. 3	45.39	29.90
QLM34 Mk. 3	19.13	11.50
QLM36 Mk. 3	31.28	19.90

AUDIO

Technica AT11EP	10.62	7.90
Technica AT13EA	19.63	13.90
*Technica AT14Sa	39.08	25.50
*Technica AT15Sa	57.27	36.90
*Technica AT20SLa	64.02	41.90

GOLDRING

G800	8.44	4.90
G800E	14.06	7.90
G800 Super E	19.69	10.90
G900 Super E	47.25	24.90

ORTOFON

FF15E Mk. II	17.00	14.90
VMS 20E Mk. II	36.50	30.90

PHILIPS

GP400 Mk. II	—	9.90
GP401 Mk. II	—	14.90

SHURE

M55E	13.37	7.90
M75/6S	12.15	6.90
M75EJ	20.96	12.90
M75ED	23.99	14.90
M95EJ	22.18	13.90
M95ED	32.20	19.90
V15-Mk. 3	66.52	44.90

	Rec. Retail Price	Comet Price
	Inc. VAT	Inc. VAT

Cartridges — continued

STANTON		
500A	18.68	13.90
500 EE	26.16	19.90
680 EE	38.64	29.90
681 EEE	59.96	49.90

HEADPHONES

AKAI

ASE7	15.00	9.90
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AMSTRAD

HPS 6A	16.56	10.90
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GOODMANS

OHP10	—	18.50
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KOSS

Technician 2	44.94	33.90
HV2	19.58	13.90
PRO-4AA	43.87	23.90
K6	17.66	12.90
K6/LC (with volume control)	20.92	15.90
K125	19.35	14.90
K135	23.91	17.90
K145	31.78	22.90

LEAK

3000	34.98	24.90
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MARANTZ

SD5	24.25	19.90
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PIONEER

SE205	13.64	10.90
SE305	21.31	16.90

SOLAVOX

300/340	7.91	4.50
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TRIO

KH33	—	16.50
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PICK-UP ARMS AND HEADS

ADC

LMF1 Carbon fibre arm	111.38	64.90
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CONNOISSEUR

SAU2	20.84	15.90
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SME

3009 Ser II fixed head shell	67.16	46.90
3009 Ser III	128.08	99.90
CA1 Carry arm	18.56	15.50
S2 head shell	5.40	4.25
FD200 Damper	22.28	16.90

HI-FI CASSETTE TAPE RECORDERS

AIWA

AD1250 Dolby	173.51	139.90
AD6300 Dolby	187.89	149.90
AD6400 Dolby	243.44	199.90
AD6550 Dolby	285.33	239.90
AD6800 Dolby	415.81	349.90

AKAI

CS34D Dolby	127.60	89.90
CS702D Dolby	149.36	97.90
CS707D Dolby	207.90	129.90
GXC39D Dolby	201.20	94.90
GXC709D Dolby	264.60	184.90
GXC725D Dolby 3 head	302.40	219.90
GXC730D Dolby auto reverse	340.25	239.90

Hi-Fi Cassette Tape Rec. — cont.

AMSTRAD

7050 Dolby	111.04	64.50
7060 Dolby	126.62	84.50

GARRARD

GC300 Dolby	157.44	77.94
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GOODMANS

SCD110 Dolby	—	94.90
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MARANTZ

5010 Dolby	192.00	139.90
5025 Dolby	276.00	199.90

PHILIPS

N2511 Dolby DNL	—	89.90
N2415 recorder inc. two loudspeakers batt./mains	—	77.90

PIONEER

CT 5151 Dolby	154.22	104.94
CTF 4040 Dolby	176.42	119.90
CTF 7070 Dolby	208.02	149.90
CTF 8080 Dolby	260.72	189.90
CTF 9191 Dolby	316.64	224.90
CTF 1000 3 head Dolby	508.32	367.90

ROTEL

RD10F Dolby	138.97	97.50
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SANSUI

SC3000/3003 Dolby	261.13	109.94
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SANYO

4028 Dolby	—	78.90
RD5055 Dolby	—	99.90
RD5150 Dolby	—	109.90
RD5300 Dolby	—	119.90
RD5600 Dolby timer	—	194.90

TRIO

KX 520 Dolby	—	119.90
KX 620 Dolby	—	129.90
KX 720 Dolby	—	139.94
KX 830 Dolby	—	175.00
KX 920 Dolby	—	149.94
KX 1030 Dolby 3 heads	—	247.00

HI-FI TAPE RECORDERS

AKAI

4000 DS Mk. II	234.35	164.90
4000 DB Dolby	302.40	214.90
GX215D	403.30	259.90
GX650D	935.90	599.90

PHILIPS

N4504 4-track DNL	—	169.90
N4506 4-track DNL	—	259.90

PIONEER

RT707 auto reverse	504.82	369.90
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HI-FI FURNITURE

Schreiber self-assembly Hi-Fi housing units.

Wood Finish

14/622	72.20	49.90
14/617	62.25	44.90
14/618	62.25	44.90
14/620	41.30	29.90
14/619	37.75	27.90

AKAI

RV100 Rack	45.40	29.90
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AMSTRAD

SR 301	29.02	21.90
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MICROPHONES

AKAI

ADM20	9.55	6.90
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AMSTRAD

DM701 stereo mic. pack	18.99	13.50
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EAGLE

UD50HL dual impedance Hi/Low	14.79	11.90
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BLANK TAPES

SCOTCH HIGH ENERGY

C60	1.66	0.85
C90	2.01	1.10

SCOTCH

High Energy C90 five pack with free head cleaner	10.31	5.50
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SCOTCH Low noise 8-track cartridge

90 mins.	2.63	1.55
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SCOTCH HI-Fi Dynarange

Spooled Tape		
5 1/2" LP 1200	5.75	3.50
7" LP 1800	7.56	4.50

T.D.K. RECORDING TAPE TDK DYNAMIC CASSETTES

D60	—	0.65
D90	—	0.89
D120	—	1.15

TDK AD CASSETTES

AD C60	—	0.95
AD C90	—	1.25
AD C120	—	1.80

TDK SUPER AVILYN CASSETTES

SA C60	—	1.25
SA C90	—	1.65

TDK AUDUA SPOOL TAPE

L1800	—	3.60
L3600 on metal NAB reel	—	9.50

MAXELL

SLN C60	1.23	0.65
SLN C90	1.60	0.85
SLN C120	2.04	1.10
UD C60	2.27	1.20
UD C90	2.57	1.35
UD C120	3.50	1.85
UDXLI C60	2.70	1.40
UDXLI C90	3.46	1.80
UDXLI C120	2.97	1.55
UDXLI C90	3.78	1.95
UD 35 90 (7" 1800')	7.00	3.80
UD 50 120 (10 1/2" 2500')	16.16	8.50
UD 35 180 (10 1/2" 3600')	16.42	8.80

MEMOREX MRX02 Cassettes

C60	—	0.80
C90	—	1.15
C120	—	1.50

MEMOREX Chrome

C60	—	1.15
C90	—	1.60

VIDEOCASSETTES

PHILIPS		
LVC 150 (2 1/2 Hrs)	—	13.90

SCOTCH

VC 60	—	13.90
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All offers subject to availability.

PLEASE NOTE

There are no longer Recommended Retail Prices on some brands of Hi-Fi equipment, consequently some Recommended Prices shown are prices recommended prior to the end of September 1976. These are left for your information to assist you in evaluating your purchase.

SYSTEMS COSTING UP TO £200

AMSTRAD 8000 Mk. 3 amplifier 2 x 10 watts with Garrard SP25 Mk. 5 belt drive turntable, base/cover and Shure M75/6 cartridge plus two Amstrad Acosta 1000 loudspeakers. 129.01 **83.70**

FERGUSON 3477 tuner amplifier 2 x 17 watts RMS pre-set tuning, plus Garrard SP25 Mk. 5 belt drive turntable fitted base/cover and Shure M75/6 magnetic cartridge with two Solavox TK15 loudspeakers. — **110.70**

AMSTRAD IC2000 amplifier 2 x 25 watts RMS with Garrard SP25 Mk. 5 belt drive turntable fitted with base/cover and Shure M75/6 magnetic cartridge plus two Amstrad 2500 loudspeakers. 177.69 **117.70**

SANYO DCA200 amplifier 2 x 15 watts RMS with Garrard SP25 Mk. 5 belt drive turntable, base/cover and Shure M75/6 magnetic cartridge plus two Goodmans RB18 loudspeakers. — **158.70**

AMSTRAD EX330 amplifier 2 x 35 watts RMS with a Garrard SP25 Mk. 5 belt drive turntable, base/cover and Shure M75/6 magnetic cartridge plus two Amstrad EX300 loudspeakers. 235.18 **163.70**

PIONEER SA5500 Mk. 2 amplifier 2 x 15 watts RMS plus Pioneer PL112D belt drive turntable, base/cover and Audio Technica AT13EA magnetic cartridge plus two Wharfedale Denton 2XP loudspeakers. 258.35 **178.19**

SANYO JCX2100 tuner amplifier 2 x 15 watts RMS with a Garrard SP25 Mk. 5 belt drive turntable fitted base/cover and Shure M75/6 magnetic cartridge, plus 2 Wharfedale Denton loudspeakers. — **183.25**

SANSUI AU2900 amplifier 2 x 17 watts RMS with Garrard GT20 belt drive turntable, base/cover and Shure M75ED magnetic cartridge plus two Wharfedale Linton 3XP 3 way loudspeakers. 291.41 **187.29**

MARANTZ 2215B tuner amplifier 2 x 15 watts RMS plus Marantz 6100 belt drive turntable, base/cover and Audio Technica AT11EP magnetic cartridge with two Solavox PR25 loudspeakers. 348.91 **189.60**

MARANTZ 1030 amplifier 2 x 15 watts RMS with Marantz 6100 belt drive turntable, base/cover and Audio Technica AT13EA magnetic cartridge plus two Marantz 4G loudspeakers. 321.63 **196.60**

SYSTEMS COSTING UP TO £250

TRIO KA3700 amplifier 2 x 25 watts RMS with Trio KD1033B belt drive turntable base/cover and Audio Technica AT13EA magnetic cartridge with two Goodmans RB20 loudspeakers. — **203.60**



**NOW HEAR THIS...
QUALITY YOU CAN
BELIEVE IN...
AT AN UNBELIEVABLE PRICE!**

**Amstrad, Garrard, Shure...
our system of the month**

Quality is guaranteed when you feature names like Amstrad, Garrard and Shure in one highly compatible package. And that's our system of the month - guaranteed quality. Combine this with an unbelievably low Comet price and you have a true Hi-Fi system to be proud of.

AMSTRAD EX333 RECEIVER

The latest innovation from Amstrad, this FM/MW/LW Receiver boasts 140 watts total music power (30 watts RMS per channel into 8 ohms). Features include: loudness control, mono/stereo control, rumble filter, scratch filter, tape monitor, headphone socket input, treble and balance control. There's FM (VHF), Long and Medium wave bands, an in-built Multiplex stereo decoder and an L.E.D. stereo beacon. The receiver has inter-station FM muting and an FM automatic frequency control switch, plus an external adjustable AM ferrite aerial to allow the best AM (MW & LW) reception.

GARRARD SP25 MK.V BELT DRIVE TURNTABLE AND SHURE M75/6 MAGNETIC CARTRIDGE

Garrard's follow-on from the very popular SP25 is the SP25 MK. V - better value than ever. Inside is a new belt-drive system driven by a 4-pole synchronous motor for precise speed and reduced rumble with negligible wow and flutter and high signal-to-noise ratio. Another improvement is the counterbalanced 'S' shaped tonearm with a low mass for improved tracking. There's a viscous damped cue control and removable cartridge carrier too. All this in a stylish wooden base means it looks as good as it sounds. But to ensure peak performance from the deck we've added the Shure M75/6 magnetic cartridge - we think you'll agree the Garrard SP25 MK. V and the M75/6 work together beautifully to make for very good listening indeed.

EXECUTIVE EX300 SPEAKERS

To round off our system of the month we chose Amstrad's Executive EX300 speakers purely because they work in perfect harmony with the rest of the system. They have a power handling of 35 watts RMS with a nominal impedance of 8 ohms, and the enclosures are handsomely finished in sheerline teak effect with a pull-off semi-see through black mesh grille. Inside is an 8-element crossover network which controls the 8" long-throw woofer, 4 1/2" midrange and 3 1/2" tweeter. The easily accessible midrange control enables you to adjust the sound to suit your room acoustics.

Rec. Ret. Price **£286.32**

COMET PRICE £199.70

ROTEL RX303 tuner amplifier 2 x 20 watts RMS plus Trio KD1033B belt drive turntable, base/cover and Audio Technica AT13EA magnetic cartridge with two Wharfedale Linton 3XP loudspeakers. — **227.15**

PIONEER SX450 tuner amplifier 2 x 15 watts RMS plus Pioneer PL112D belt drive turntable, base/cover and Audio Technica AT13EA magnetic cartridge with two Wharfedale Linton 3XP loudspeakers. 346.05 **242.19**

SYSTEMS COSTING OVER £250

PIONEER SA6500 Mk. 2 amplifier 2 x 30 watts RMS with Pioneer PL112D belt drive turntable, base/cover and Audio Technica AT13EA magnetic cartridge, plus two Wharfedale Glendale 3XP 3 way loudspeakers. 379.20 **260.24**

PIONEER SX550 tuner amplifier 2 x 20 watts RMS with Pioneer PL112D belt drive turntable, base/cover and Audio Technica AT13EA magnetic cartridge plus two Wharfedale Linton 3XP 3 way loudspeakers. 395.30 **272.19**

SANYO JCX 2300K tuner amplifier 2 x 30 watts RMS plus Sanyo TP626 belt drive turntable, base/cover and Audio Technica AT11EP magnetic cartridge with two Goodmans RB20 loudspeakers. — **277.60**

ARMSTRONG 621 amplifier 2 x 40 watts RMS with Strathearn STM4 direct drive turntable, base/cover and Ortofon FF15E magnetic cartridge plus two Celestion Ditton 22 loudspeakers. — **305.70**

MARANTZ 2226B tuner amplifier 2 x 26 watts RMS with Marantz 6100 belt drive turntable, base/cover and Audio Technica AT13EA magnetic cartridge plus two Wharfedale Glendale loudspeakers. 492.08 **323.20**

ROTEL RX503 tuner amplifier 2 x 35 watts RMS plus a Rotel RP5300 direct drive turntable, base/cover and Audio Technica AT13EA magnetic cartridge, with two Wharfedale Glendale loudspeakers. 513.21 **328.20**

SANYO DCA1001 amplifier 2 x 50 watts RMS with Sanyo TP1020 direct drive turntable base/cover and Audio Technica AT13EA magnetic cartridge plus two Goodmans RB 65 loudspeakers. — **328.60**

PIONEER SX650 tuner amplifier 2 x 35 watts RMS with Pioneer PL112D belt drive turntable, base/cover and Audio Technica AT13EA magnetic cartridge plus two Wharfedale Glendale 3XP 3 way loudspeakers. 525.70 **347.24**

TRIO KR4070 tuner amplifier 2 x 40 watts RMS with Trio KD1033B belt drive turntable, base/cover and Audio Technica AT13EA magnetic cartridge plus two Wharfedale Teesdale loudspeakers. — **386.60**

MARANTZ 2238B tuner amplifier 2 x 38 watts RMS plus Marantz 6150 direct drive turntable, base/cover and Ortofon VMS20E Mk. II magnetic cartridge with two Celestion Ditton 22 loudspeakers. 644.13 **479.60**

Classified Advertisements

Advertisements for this section must be pre-paid. The rate is 13p per word (private), minimum £2.60. Box Nos. 45p extra. Trade rates 16p per word, minimum £3.00. Copy and remittance for advertisements in **JULY** issue must reach these offices by **5th JUNE** addressed to: The Advertisement Manager, Hi-Fi News & Record Review, Link House, Dingwall Avenue, Croydon CR92TA. **NOTE:** Advertisement copy must be clearly printed in block capitals or typewritten.

Replies to Box Nos. should be addressed to the Advertisement Manager, Hi-Fi News & Record Review, Link House, Dingwall Avenue, Croydon CR92TA, and the Box No. quoted on the outside of the envelope. The district after Box No. indicates its locality.

Sex Discrimination Act 1975. No job advertisement which indicates or can reasonably be understood as indicating an intention to discriminate on grounds of sex (e.g. by inviting applications only from males or only from females) may be accepted, unless

- (1) the job is for the purpose of a private householder or
- (2) it is in a business employing less than six persons or
- (3) it is otherwise excepted from the requirements of the Sex Discrimination Act.

A statement must be made at the time the advertisement is placed saying which of the exceptions in the Act is considered to apply.

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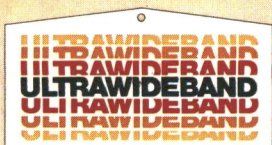
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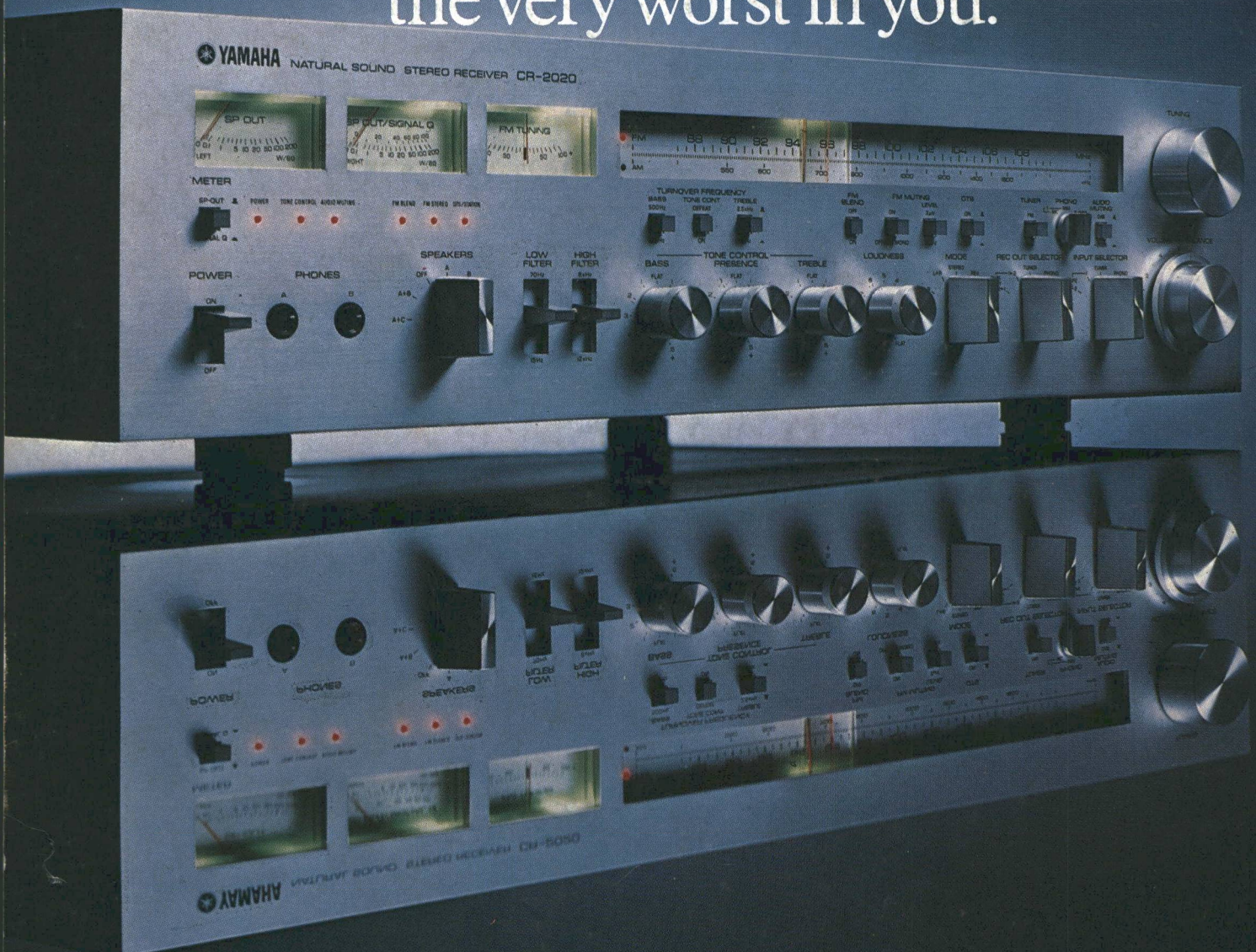
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